The Veterinary Record

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 9. MARCH 4, 1939. VOL. 51.

The Treatment of Sterility in the Bitch by the Use of Gonadotrophic Hormones

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Probably the commonest form of sterility in the bitch is that due to functional disturbance of the endocrine system. The most usual manifestation is the prolonged absence of oestrus or heat. In the series of cases presented in this paper the usual history was that the heat period was overdue or, in the case of young animals, that they had never at any time shown the characteristic signs of heat. The treatment adopted for such cases was the injection of two different gonadotrophic hormones, the details of which will be given later in this paper.

In order to follow the rationale underlying this type of therapy, it may be useful to review briefly the relationship of the so-called "sex hormones" to sex physiology. The experimental work of Zondek (1931) established that ovarian activity in mammals is controlled by certain hormones which are secreted by the anterior lobe of the pituitary. These hormones regulate the cyclical changes in the ovary during adult sex life and are also responsible for the changes which occur in the infantile ovary at puberty. A widely held view is that the anterior pituitary produces at least two gonadotrophic hormones which exert different effects on the ovary, *viz.*:—

(i) A hormone causing ripening of the Graafian follicle, which results in the increased production of follicular hormone (*oestrone*).

(ii) A luteinising hormone stimulating the granulosa cells in the ovary to form the corpus luteum and the secretion of corpus luteum hormone (*progesterone*).

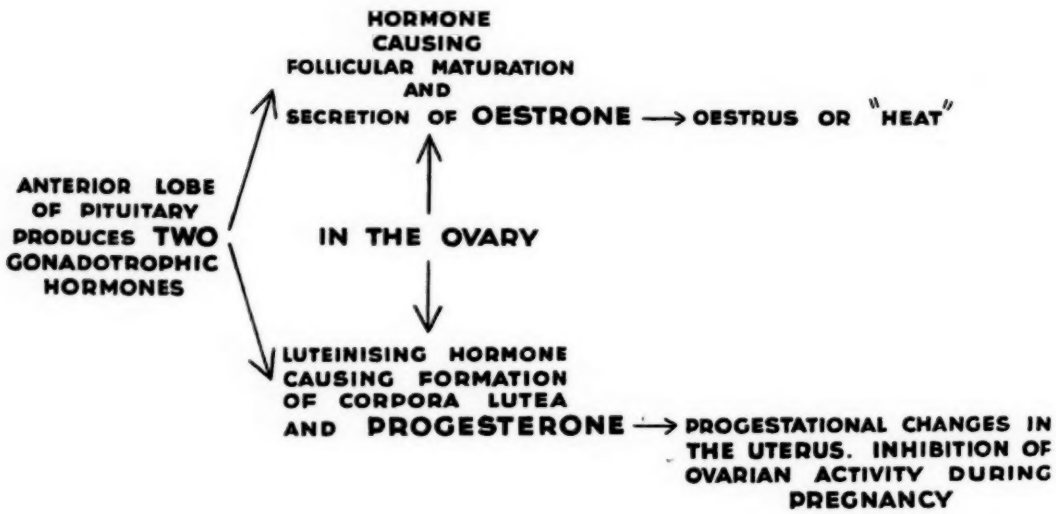
The secretion of oestrone produces the changes in the uterus and vagina which are associated with the phenomenon of oestrus or heat in animals. It is important to note that oestrone production by the ovary depends on a sufficiency of the anterior pituitary hormone, and if the latter is not present oestrus remains in abeyance. The action of progesterone on the uterus is to cause proliferation of the endometrium and quiescence of the uterine muscle, changes which are a preparation for gestation and the implantation of the fertilised ovum. During pregnancy (and pseudo-pregnancy) progesterone is thought to inhibit the maturation of new follicles and the occurrence of oestrus. For an account of the inter-relationship of the various sex hormones the reader is referred to "Recent Advances in Sex and Reproductive Physiology," Robson, J. M. (J. A. Churchill, London, 1934). A schematic representation of the actions of the hormones referred to above is shown in Fig. 1 (*over-leaf*).

From the foregoing, it is evident that any endocrine dysfunction which results in a sub-normal supply of anterior pituitary gonadotrophic hormones to the ovary will result in interference with normal ovarian activity. This in turn will lead to absence of oestrus or inability to conceive. The external causes underlying dysfunction of the anterior pituitary and interference with ovarian function are not well understood, but so far as the bitch is concerned it would appear that prolonged absence of oestrus (anoestrus) may be due to improper diet and/or delay in the commencement of breeding. It is well known that animals which are bred at a comparatively early age, one to two years in the case of a bitch, are likely to have a more successful breeding career than those in which breeding is delayed for several years. This fact may account for the greater part of the sterility encountered among greyhound bitches, which are put to stud at the ages of four to five years after a hard racing career on the track.

GONADOTROPHIC HORMONE USED IN THE PRESENT SERIES OF CASES

Treatment in 16 out of the 18 cases reported in this article consisted in the simultaneous

FIG. 1 SCHEMATIC REPRESENTATION OF THE ACTION OF GONADOTROPHIC HORMONES


HORMONE CAUSING FOLLICULAR MATURATION AND SECRETION OF OESTRONE
OESTRUS OR "HEAT"
ANTERIOR LOBE OF PITUITARY PRODUCES TWO GONADOTROPHIC HORMONES
IN THE OVARY
LUTEINISING HORMONE CAUSING FORMATION OF CORPORA LUTEA AND PROGESTERONE
PROGESTATIONAL CHANGES IN THE UTERUS. INHIBITION OF OVARIAN ACTIVITY DURING PREGNANCY

subcutaneous injection of two different gonadotrophic hormones. In the remaining two cases (Nos. 9 and 10), the luteinising hormone was given after the bitches were served. The actual preparations used were (1) *Antostab*,* containing the follicle-stimulating principle obtained from the serum of pregnant mares, and (2) *Physostab*,* containing the luteinising principle obtained from human pregnancy urine.

In all cases, the bitches for treatment, whatever the breed, received the same dosage of the hormones, *viz.*, 187 Mouse Units of Antostab and 50 Mouse Units of Physostab.

As there is no international standard preparation yet available for gonadotrophic hormones, the following details are given for reference purposes: 1 M.U. Antostab is defined as the minimal amount of hormone that will double the weight of the ovary of a three- to four-week-old infantile female mouse in the course of three to four days. 1 M.U. Physostab is defined as the minimal amount of hormone that will produce corpora lutea, visible macroscopically, in half the ovaries of three- to four-week-old infantile female mice in the course of three to four days. This unit is larger than the infantile rat luteinising unit and is considerably larger than the rat vaginal cornification unit.

It must be pointed out that care should be taken not to exceed the doses recommended by the makers of the particular pituitary preparations used. The effect of injecting excessive doses of gonadotropic hormones into animals is quite the opposite of that obtained by relatively small doses. Large doses may completely inhibit oestrus. One interesting application of this is the injection of 5,000 Rat Units of Prolan in 10 c.c. of oil for the suppression of oestrus in gilts (Koch, 1938). Oestrus in cats and dogs can also be suppressed by the injection of relatively large doses of prolan given shortly before the heat period is due.

*Antostab and Physostab are proprietary preparations of Messrs. Boots Pure Drug Co., Ltd. They are put up in sterile ampoules for injection.

History of the Cases Treated

A short history of the cases treated is given in Table I, column vi.

All the bitches treated appeared to be in normal health. None of them was excessively fat.

Cases 1 to 10 are bitches in which oestrus had not been observed for periods ranging from ten months to two years, *i.e.*, prolonged anoestrus. Case 2 is interesting in that this bitch had exhibited pseudo-pregnancy after her last oestrus twelve months previously, and had actually suckled a litter of pups belonging to another bitch. This feature was probably due to the persistence of progesterone secretion from a previous corpus luteum, which was sufficient to inhibit oestrus.

Cases 11 and 12 were two young bitches in which oestrus had never occurred. The external

genitalia were clinically normal, but absence of oestrus may have been due to hypoplastic juvenile ovaries (Benesch and Kostner, 1935).

In case 16 there was a history that the last oestrus of this bitch had been of very weak intensity. This probably indicates that her oestrone production was deficient, but whether this may have been due to insufficient anterior pituitary hormone production or to ovarian causes, it is impossible to say. The fact that after treatment she exhibited a normal heat but was barren when mated suggests ovarian dysfunction.

The histories of cases 13, 14, 15, 17 and 18 require no special comment.

Table I
Details of the Cases Treated.

I. Case and Breed.	II. Commencement of Oestrus: Days after Injection.	III. Character and Duration of Oestrus.	IV. Whether Mated after Treatment.	V. Result of Mating.	VI. History Previous to Treatment.
1. Bedlington	3	Normal	Mated	Whelped	Maiden, 2 years old. Prolonged anoestrus. (11 months)
2. „	2	„	„	Barren	Maiden. Pseudo-pregnancy. Prolonged anoestrus. (12 months)
3. Cocker	4	„	„	Whelped	Maiden, 2½ years old. Prolonged anoestrus. (10 months)
4. Greyhound	6	„	„	„	Maiden. Prolonged anoestrus. (12 months)
5. Cocker	No oestrus	—	—	—	Litter at 3 years; now 4½ years. Prolonged anoestrus. (10 months)
6. „	4	Normal	Mated	Whelped	Litter at 1½ years; now 2½ years. Prolonged anoestrus
7. „	4	2 days	Not mated	—	Litter at 1½ years; now 3 years. Prolonged anoestrus.
8. Greyhound	6	Normal	Mated	Whelped	Maiden, 4 years old. Prolonged anoestrus. (18 months)
9. „	17	„	„	„	Maiden, 5 years old. Prolonged anoestrus. (10 months)
10. „	19	„	„	In whelp	Maiden, 4 years old. Prolonged anoestrus. (2 years)
11. Sealyham	4	„	„	Whelped	Maiden, 1 year old. Never observed in oestrus.
12. Cocker	3	„	„	Barren	Maiden, 1¾ years old. Never observed in oestrus.
13. Greyhound	4	3 days	Not mated	—	Maiden. History unknown
14. „	4	Normal	„	—	Maiden. History unknown
15. Cocker	3	„	Mated	Barren	Maiden, oestrus cycle apparently normal; barren at last mating, 6 months previously
16. Greyhound	6	„	„	„	Last oestrus, 6 months previously, weak; mated but barren
17. „	No oestrus	—	—	—	Three previous litters. Barren to last mating 3 months ago
18. Terrier	3	Normal	Mated	Whelped	Maiden. In oestrus 3 months ago but not mated

Results of Treatment

Onset of Oestrus.—Of 18 bitches exhibiting sterility in various forms and which were treated with Antostab and Physostab, 14 came on heat in two to six days, whilst in two cases the onset of heat was delayed for 17 and 19 days respectively. Oestrus or heat throughout this article includes both the pro-oestral and true oestral phases. Only two of the bitches treated failed to show any symptoms of heat.

[The observations regarding the onset and duration of heat were made by Mr. Scott Dunn, M.R.C.V.S., Mr. Bateman, M.R.C.V.S., and by an experienced dog breeder.]

In cases 7 and 13 the heat was of low intensity and lasted for only two and three days respectively. Probably a second course of treatment combined with oestrone might have been more successful in these cases. It was impossible, however, to do this as the bitches were not available for further treatment.

In regard to the two greyhound bitches, cases 9 and 10, which came on heat 17 and 19 days respectively after treatment, there may be some doubt as to whether this was the result of the injections or not. It should be explained that these were the two cases in which Antostab and Physostab were not given simultaneously, the latter being given after service. This, together with the fact that the bitches were in the same ownership and were injected on the same day, makes it extremely unlikely that it was a matter of coincidence that they should both come on heat approximately the same time after treatment. It seems justifiable, therefore, to attribute the onset of heat to the hormone treatment.

Resulting Pregnancies.—Of 13 bitches which showed normal oestrus after treatment and which were mated, nine conceived, whilst four

proved barren. Twelve of the bitches had actually whelped at the time of writing this report, and in all cases the offspring were apparently normal. Thus, contrary to a belief current among laymen, it cannot be held that the induction of oestrus by artificial means is in any way deleterious to the production of normal healthy offspring.

CONCLUSIONS

The treatment of functional sterility in bitches can be successfully undertaken by the use of the appropriate gonadotrophic hormones. A certain proportion of cases may fail, however, to respond to treatment, and in selecting cases one should be guided by the previous history of the case. A successful issue is more likely to result when the cause of sterility is due to prolonged absence of oestrus. This form of therapy is not applicable to sterility arising from infection.

Failure of treatment may in some cases be due to the use of inadequate doses of the hormones. It would be unwise, however, to use excessive doses as these may have the opposite effect to that which is desired.

Summary

(1) Eighteen bitches exhibiting sterility due to functional causes were treated with two gonadotrophic hormones.

(2) Sixteen bitches showed the characteristic signs of heat after treatment. In 14 cases the heat was of normal duration, whilst in two cases it lasted for only two and three days respectively.

(3) Thirteen bitches in which apparently normal heat was induced were mated. Nine of these bitches conceived and produced normal litters. Four bitches proved barren.

I am indebted to Messrs. Boots Pure Drug Co., Ltd., for the supplies of Antostab and Physostab supplied through Professor Miller. My thanks are also due to Dr. E. C. Amoroso, Mr. J. K. Bateman, and Mr. H. Scott Dunn for providing the bitches used in this work.

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A survey of the Milk Marketing Scheme since its beginnings five years ago has been issued by the Milk Marketing Board. A first consideration in the discussions between Sir Reginald Dorman-Smith, the new Minister of Agriculture, and the representatives of the National Farmers' Unions, will be a remodelling in the light of the survey. —*Daily Telegraph.*

Parasitic Bronchitis, Husk or Hoose*

R. HUDSON, F.R.C.V.S.,

Retford, Notts

As I went about during the early part of last summer when pastures were being eaten bare I often told myself that it would be a bad time for stock later on, for such conditions do encourage parasitic infections. My predictions were right, for I have had many animals with hoose this summer and autumn. Both cattle and sheep have suffered heavily. Many animals have died and others have suffered loss of condition. As is usual when farming conditions are bad, the farmers struggle along with quack remedies and do anything rather than seek veterinary aid. Consequently many animals have been very ill when I have been called in to attend to them. One farmer has recently lost seven out of a lot of 16 one-and-a-half-year-old cattle. Another lost eight lambs out of a 100 in a few days.

Husk is a disease of the air passages due to thread-like worms. The correct name of the worm in cattle is *Dictyocaulus viviparus*, an old synonym at one time in common use being *Strongylus micrurus*. It is from 4 to 8 cm. long. The husk worm of sheep is known as *Dictyocaulus filaria*, *Strongylus filaria* being an old synonym. This species is from 3 to 10 cm. long. Both species live in the small bronchial tubes where they set up irritation and inflammation extending into the lung tissue. Coughing leads to the breaking down of the air vesicles, emphysema, faulty circulation and oedema and a train of pathological conditions.

Copying from Colonel Wood's paper at the "National" meeting—the life history of the parasites has been studied by several workers including Cameron, Daubney, etc., and no essential difference has been shown between them. The eggs when extruded contain living embryos which may hatch in the air passages or, if coughed up and swallowed, in the alimentary tract of the host. Outside the host the larvae undergo two moults and become third stage or infective larvae in six to seven days. They can develop and live in water, can resist low temperatures a long time and considerable drying. The host is infected by swallowing the larvae either from pools or grass. They penetrate the wall of the intestine, enter the lymph stream and are carried to the heart and lungs. Experimental adult worms have been found in the bronchi after 18 days.

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*Paper presented to the North Midland Division, N.V.M.A., at Sheffield, November 29th, 1938.

Lambs may throw off infection when housed in from 12 to 14 weeks. It is stated that the life of the adult worm in the lung is not a long one. It is known that a pre-natal infection may take place. The life history is simple. Eggs or embryo may be coughed up or may be swallowed, pass out by the faeces and infect pastures and drinking places.

In the specimen shown here I found that it contained eggs with fully developed living embryos which were ready to hatch out. I have mentioned that eggs and larvae must pass out of the host to complete their life cycle, but one wonders whether the action of the ciliated epithelium is powerful enough to bring all of the larvae towards the throat in the case of a heavy infestation, or whether some of them may not work their way downwards into the smaller bronchioles and air cells and do more harm than maturer parasites. This may have some bearing on the treatment, as I shall show later.

As in most parasitic diseases, the seriousness probably depends entirely on the number of parasites present in the lungs and the resistance shown by the animal to its effects. Other diseases, such as fluke, stomach and intestinal infections, the effects of a sharp frost and cold rains diminish resistance and may lead to a high mortality.

Some pastures carry infection from year to year, and it is probable that even a hard frost does not destroy all of the larvae; in the South and South-West, where frosts are less evident and showers plentiful, the infection probably remains more dangerous.

Occasionally I have met with outbreaks on pastures where the disease has not been before; in fact the animals from one of which I gathered the worms shown were in a field which had not produced hoose in anyone's memory, yet all have had it severely and seven died. One wonders how the field became infected. There is the possibility that the hay infected them during the winter and so the pasture became infected, but if so, the owner states they did not cough until the beginning of October. The water supply is a stream.

Animals from six to twelve months are the most susceptible to the disease, but sometimes cows and strong bullocks are attacked. Jerseys seem particularly susceptible, if one can judge from the few in my district.

The character of the land shows some variation. Uplands of clay and low marshy fields are more likely to become infected, and dry sand lands the least. I do not think the land on our clay hills has been so productive of hoose as it was years back and I think this is because farmers have slagged the land less and the herbage has died out. I remember some fields which were slagged and bone tillaged, and there the milch cows suffered yearly. Slag, by encouraging clover and undergrowth, retains moisture which enables the parasite to exist better. The effects of the parasite in the lungs vary, as I have said, according to the number present. Confined to the smaller bronchi in small numbers they may cause irritation, perhaps only tickling, for they do not appear to inflame the mucous membrane, but in heavy infestations and when the minute air passages and cells are involved by the downward migration of the larvae, which I have suggested, then we find typical bronchial pneumonia with breaking down of the air cells and emphysema sometimes with oedema of lung tissue.

One can make many *post-mortem* examinations and find only enlargement of the lungs — emphysema — with distributed congested patches; but sometimes, when an animal has carried on with increased respirations for a week or more, one may find extensive areas consolidated—pneumonia. Haemorrhages into the bronchi are not uncommon and the blood rapidly clotting soon leads to death from asphyxia.

Treatment.

A number of herds have been injected this summer and autumn and have undoubtedly received benefit. They have improved in condition, though some have continued to cough. Not all have had the benefit of a change of pasture though this is usually advised.

The injection I use is:—

℞ Acid carbol.	v m.	*Dose*—Lambs	3i
Ol. tereb.	xv m.	Calves	3i to iv
Chloroform	x m.	2 yr. and over	3iv to viii
Ol. rapi.	3i		

It is an old injection and I have been loath to give it up for others. It is good and safe for lambs while others, such as Penhale's injection, I found risky. I hope to hear what some of you use and what the results are.

Chenopodium, pyrethrum, iodine, are in some intertracheal injections and I should like to hear how they compare with the older preparations.

When an animal has developed bronchitis or pneumonia symptoms I have usually stopped the injection treatment and adopted oral medication.

Occasionally a bad case has responded to tc. opii and terebene, terebene and camphor, but such cases often die. Lugol's solution, injected, I have tried without benefit and also intravenous injections of sodium benzoate (*Record*), but it only hastened the end.

Two cases had quinine di-chloride injections —20 grains in 10 oz. water; dose, 1 to 2 oz. for calves—and although it temporarily upset them

they improved up to the last time I saw them.

Injections in acute bronchitis cases must not be irritant and are better given warm.

It has usually been my practice to keep bad cases in the yard and feed them on dry food or, when available, roots with the tops on, or mown green food. Often, however, I have had my doubts as to its benefit: the animals miss the usual exercise and fresh air, often get rough indigestible food which loads the stomach and hinders easy respirations. Many cases have done better when left out after injecting. Lime in the drinking trough is useful, as also is ferri perchlor.

I think treatment should be varied to suit the type of the disease with which we have to contend; also it should not aim solely at killing the parasite in the air passages or freeing them only, but also at dealing with it on its way. Therefore one might summarise treatment as follows:—

Intertracheal injection for stronger animals in mild outbreaks and repeated in three to seven days, the animals being left out and pasture changed.

Intertracheal injection for young and weak animals with housing at night, and dry feeding, with cupri. sulph. mixed with the food.

Oral, intravenous, non-irritant intertracheal treatment for those showing increased respiration—acute bronchitis or pneumonia—or those very weak and ill. If feeding, small doses of copper sulphate are helpful; if not, they may be given by mouth as also may terebene, camphor and quinine.

Intravenous injections which soon get to the affected part are not well borne, unfortunately, while drugs like quinine are expensive and much action is lost when they are mixed in the rumen contents. However, I find that quinine is tolerated fairly well and useful intertracheally.

Intertracheal injection in lambs has for many years proved good treatment along with changes of pasture or folding on roots. A sprinkling of a diluted copper sulphate powder in the food is very beneficial.

PREVENTION.

How can we prevent the condition? A pasture which has not produced it may do so next season, and vice versa. Salt and chalk licks may be helpful, as may keeping young animals off risky pastures; also the provision of good feeding, *i.e.*, helping by suitable concentrates. Calves up to a year old should be housed at night. Lambs should be weaned early, kept away from old animals and given clean pastures with frequent changes. Temporary pastures are best laid for one year only.

When animals are housed one should not forget that the water supply may be a source of infection, which may be checked by placing unslaked lime in the trough. The lime is also beneficial in other ways.

Discussion

Mr. E. MARRISON (the President), in opening the discussion, said they had heard an excellent paper, all points being dealt with. It would be apparent that the treatment was not altogether successful: years ago he had given intertracheal injections and he could reasonably say that 75 per cent. of the animals died and he was glad to get away from the farm.

He had a treatment for application at three points—both nostrils and the mouth—which he had found extremely satisfactory and from which the percentage of losses was very small. Should anyone be interested in this treatment he would be glad to supply it on application to him.

Mr. F. C. SCOTT expressed disagreement with the statement that with the use of intertracheal injections the mortality was 75 per cent. and said that in the majority of cases if the animals were kept away from the source of supply they would cure themselves. In the case of sheep, ewes died like flies and on *post-mortem* examination symptoms were shown only in the liver, probably due to migration.

Mr. HUDSON said he thought most injections were too irritant and suggested that glycerine was not as good as oil.

Mr. T. C. FLETCHER, commenting there had been no mention of inhalation in treatment, asked if it was out of date.

Mr. F. C. SCOTT suggested that when gases got to the small alveoli they were so dilute as to be useless.

ANAESTHETICS FOR ANIMALS

We are pleased to notice in a recent issue of our contemporary, the *Lancet*, the following annotation concerning the work of our colleague, Professor Wright, on the subject of anaesthetics for animals:—

"Few people are aware of the amount of study that is given to-day to anaesthesia in veterinary surgery or of the wide extent and efficiency with which the results are being applied. In a paper read to the 13th International Veterinary Congress, J. G. Wright reveals some of the difficulties confronting the anaesthetist who has to deal with animals as different as a horse and a cat. Compared with these, problems of meeting the requirements of the anaemic young housekeeper and the hard-drinking squire seem simple. Moreover, animals of the same species show almost as great individual differences in reaction to narcotic drugs as do human beings. The barbiturates have proved even more useful in animal surgery than in man, though in the horse the huge doses necessary prohibit their use on grounds of cost. For this animal about 5 grm. of chloral hydrate so that the animal can be quietly cast, followed by open chloroform, appears to be the method of choice. For the dog Wright considers nembutal the best anaesthetic for all extensive surgical procedures and recommends it also for the many minor operations which hitherto have been usually performed under morphine. It is interesting that animals, like human beings, are subject to excitement during recovery from barbiturate anaesthesia."

A NOTE ON SOME EXPERIMENTS INVOLVING THE COLLECTION OF 24-HOUR SAMPLES OF DOG URINE

A. N. WORDEN, B.Sc., M.R.C.V.S.

Many veterinarians have stated that, for the purpose of accurate quantitative urine estimations in dogs suffering from nephritis and other diseases, it would be necessary to analyse 24-hour samples (*e.g.*, Wooldridge, W. R., 1936, *Vet. Rec.* **49**. p. 452).

The experiments mentioned here were carried out while I was a final year student at the Royal Veterinary College, London, and were, *inter alia*, for the purposes of estimating the porphyrin excretion of dogs undergoing experimental sulphanilamide dosage by Dr. A. W. Stableforth, who allowed me to have the urine for quantitative spectroscopical examination. The results obtained are irrelevant to this article and are not included here.

In order to obtain 24-hour samples of urine I designed, in conjunction with Mr. Tindley (Senior Technician in the Dept. of Physiology, R.V.C.) a special kennel built on the lines of a metabolism cage and which we considered to be of a type suitable for inclusion in a canine hospital or infirmary for similar studies upon clinical material. The experimental dogs employed by Dr. Stableforth were adults of both sexes which were accustomed to being allowed exercise out of doors, and only in one case of several which were employed did the animal appear to take readily to the idea of passing urine in the comparatively confined space of the kennel. Most animals refused to pass anything during the first 24 hours of confinement, and none was really happy at being deprived of its daily runs. Although 24-hour samples were eventually obtained regularly, it seems improbable that many dogs could be induced to pass normal amounts of urine during a single 24-hour confinement and, for quantitative analysis, urine which has been stored in the bladder for many hours can scarcely be regarded as identical with that freshly secreted by the kidneys. If it were, it would, of course, be a feasible procedure to confine a dog for 24 hours and then to withdraw all urine by catheterisation.

It may be said, therefore, that unless a dog is available for study over a considerable period, a metabolism type of kennel is unlikely to solve the problem of obtaining 24-hour urine samples from clinical cases. As the objections to drawing conclusions from "haphazard" urine sampling for the purposes of differential diagnosis in nephritis still remain valid, it would seem more reliable to restrict quantitative examination to blood samples. In this connection, my experience of blood-urea analysis leads me to believe that this in itself is likely to prove of considerable value in the study of canine nephritis, although the literature as yet contains very few records of such analyses upon clinical material.

I should like to express my thanks to Professor W. Legge Symes for authorising construction of the kennel and for his kind help and advice concerning the methods employed.

THE APPLICATION OF SCIENCE TO THE WELFARE OF ANIMALS*

C. W. HUME, M.C., B.Sc., F.Z.S.

(Hon. Secretary and Chairman of The Universities' Federation for Animal Welfare; Editor to the Physical Society)

Hitherto a meeting has been held annually at this Conference by ULAWS (The University of London Animal Welfare Society), but the widening sphere of action of that Society has necessitated the formation of a similar body on a national basis. This year, therefore, it is as UFAW that we come before you. Another new development has been the formation of a Scientific Investigations Committee under the Chairmanship of Mr. H. R. Hewer. The subject of the present address has been chosen in view of these two extensions of our work.

In recent times men of science have begun to turn their attention to the use which is made by mankind of the power which they have put into its hands. The formation last year of a new section of the British Association for the Advancement of Science, devoted to the study of the social relations of science, was a portent of a growing and genuine, if not yet widespread, concern for such matters. Naturally the use of scientific inventions for the purposes of war, and the far-reaching effects of invention on the social habits and welfare of mankind, have attracted the greatest share of attention, but this afternoon I am making an appeal to scientific men to give greater attention to those members of our community who cannot speak for themselves, namely, the animals and birds with whose economy human economy is inextricably entangled.

The veterinary profession has become increasingly concerned with the humanitarian as well as the economic aspect of its work, a happy development in which our own President, Sir Frederick Hobday, has played no inconsiderable part. Apart from veterinarians, few

*Address to a meeting of The Universities' Federation for Animal Welfare, held at University College, Gower Street, W.C.1, on Monday, January 2nd, 1939, during the Conference of Educational Associations, with The Rt. Hon. Lord Semphill, A.F.C., in the Chair.

scientific men have devoted their thoughts specifically to alleviating the sufferings of animals. There is, however, no sound reason why they should not do so. Unless we are to be narrowly racial in our interests, we are bound to extend our sympathy to a wider field than that merely of man's welfare, man's commercial profit, and man's exploitation of his biological environment.

My object this afternoon is, therefore, to appeal to men of science to give more specific attention to problems concerned with the welfare of animals, and I shall be mainly occupied with a few examples of such problems which either have been solved or still call for solution. But at the outset I must refer to the important Report on Veterinary Education in Great Britain which was published by the Stationery Office in July last. That report showed that in spite of the claim which we as a nation make to leadership in kindness to animals, Great Britain lags seriously behind several foreign countries, such as Switzerland and Germany, in the provision it makes for veterinary training and service. The Report on Veterinary Education advocates an increased expenditure by the State and it does so, I must admit, on purely economic grounds; nevertheless, if the recommendations of the report are carried out, those animals which are used in agriculture will themselves greatly benefit by it. Two features of the report are of special interest to our Federation. The first is the emphasis laid in it on the duty of maintaining animals in good health, as opposed to that of merely attending to them when they become diseased; in other words, on preventive as distinct from curative medicine. The humane value of this policy is so obvious that I need not dwell upon it. It is interesting to note in this connection that the State veterinary service under the Ministry of Agriculture is no longer called the "Diseases of Animals Division," but has been renamed the "Division of Animal Health." With this policy of fostering preventive medicine in view, the report lays stress on the importance for the veterinary student of obtaining practical experience of farm animals under the conditions under which they normally live. It recommends that each of the veterinary schools shall have a field station of about 100 acres, with a small herd of milking cows, a flock of about 50 ewes, about eight or ten sows, a flock of hens, and a few horses. Then again, before a student enters upon his period of clinical training in his fourth year he is to have at least six months' pupilage on a farm. Further, there are to be rural veterinary hospitals corresponding to the voluntary hospitals for human beings.

The second series of recommendations that is of special interest to UFAW is as follows. It is recognised that the majority of veterinary students have not in the past been sufficiently in touch with the universities, and it is now proposed that the curriculum for the M.R.C.V.S. diploma should be rearranged so that the purely scientific work shall be done in the first three years in close association with a university, while clinical work shall be largely relegated to the fourth and fifth years, and have a post-graduate character. Such a plan will be of advantage not only to the veterinarians and to the animals with which they have to deal, but also to the universities with which they are to be associated. Most of the men in the universities are apt to confine their sympathies rather narrowly to their own species, and the presence among them of students of veterinary science will foster a very desirable and legitimate broadening of our sympathies and interests.

Before passing on to other benign applications of science to the treatment of animals, I feel bound to refer to a development which must be a matter of grave concern to all who have humane sympathies, namely, the introduction of mass-production methods in animal husbandry. These are best known in connection with the battery system of raising poultry, but have also been extended to pigs and even dairy cattle. As Professor Miller, of the Royal Veterinary College, put it in a recent lecture: "Is there among us a real animal lover who does not feel a qualm of pity on a visit to a modern battery poultry establishment? The picture of eggs being hatched by the thousand, of chicks grouped, graded, sexed and classified like so much manufacturing raw material, and then of pullets and hens kept in a space of exactly so many inches wide, deep and high, fed on a standard ration, laying one standard egg a day which rolls along a sloping floor and then grades itself, leaves in my mind, and I venture to hope in the minds of others, a mixture of awe at the efficiency of the system and horror for the feelings of the birds." Analogous methods are being adopted in the raising of swine and dairy cattle. How far they can be described as cruel I hardly know. Opinions differ on this point, and unfortunately we cannot ask the animals themselves. Nevertheless, the sacrifice of all other considerations to efficiency of production, labour-saving, and commercial profit, at a time when science is putting new possibilities of exploitation into our hands day by day, suggests the need for a careful scrutiny of the trend of animal husbandry.

I will now give an instance in which scientific invention with one hand has inflicted a grievous wrong but with the other had supplied a means of redress. The invention of oil-burning ships has spelt disaster to innumerable sea-birds. The oil waste when pumped into the sea forms a sticky mass by which the birds become fouled to such an extent that they can neither swim nor fly and die a miserable death of starvation. The means which have been devised for abating

this evil have been only very partially adopted. For dealing with waste oil in relatively small quantities, the science of engineering has contributed the oil-separator, which can be mounted on board ship and used for extracting the oil from the bilge water and the contents of the ballast tanks before these are discharged into the sea. Unfortunately, however, apart from the fact that many ships do not install separators at all, the device is hardly equal to dealing with the large-scale problem constituted by the cleaning of fuel tanks, particularly in the case of oil tankers. In the course of time a thick sludge collects at the bottom of the tanks, and this has to be scraped out and disposed of. Frequently the process is carried out on the high sea with disastrous effects on bird life. The technical problem has been solved by the Wheeler system, which requires the use of a specially constructed tank-cleaning ship kept in attendance at the port; such ships have been used with success in Liverpool and in naval ports. Thus the technical solution of the problem is available, but the difficulty is to get it used. The end of the oil menace for sea birds would be in sight if we could secure the installation of a tank-cleaning ship in every port, and devise some scheme for inducing or compelling oil-burning ships to use it.

In connection with humane slaughter the inventor has directly applied his talents for the advantage of animals, and with success. Two types of humane killer pistol using a captive bolt, the Cash and the Temple-Cox, have long been available in this country, together with various other pistols which on account of their using a free bullet have not enjoyed so much popularity. These pistols are in general use for cattle and are used for sheep in the majority of districts in Britain, although a certain number of the less progressive local authorities have failed to adopt the bye-law by which, under the Slaughter of Animals Act, 1933, they are empowered to make the use of mechanical stunning compulsory.

The position of pigs in the slaughterhouse is less satisfactory. Nearly ten years ago a system of electric "stunning" was introduced. A current of approximately half an ampere is passed from side to side through the head of the pig, and the animal, after a period of intense stimulation, lies inert. It has generally been assumed that the process rapidly produces unconsciousness, and a number of experts have, perhaps rather rashly, added their authority to this view.

Doubt has been thrown on the humaneness of the method, however, by human experience; in particular Hertz attempted in vain to anaesthetise human patients in Paris by the use of a current which, when due allowance is made for the difference in wave-form, is seen to have been little less powerful than that ordinarily used in the slaughterhouse. The amperage used by Hertz was substantially lower than that used in the slaughterhouse, and it has often been assumed that the stimulus was correspondingly weaker. This, however, is a misunderstanding, for Hertz used a wave-form which is known to be about 20 times as effective as the sinusoidal wave-form of the ordinary alternating current. The question whether electric stunning is really humane has, therefore, remained open, and I regret to say that recent researches by Roos and Koopmans in the Laboratory of Veterinary Physiology of the University of Utrecht have strengthened the doubts which have been felt on the subject. These workers have shown that the ordinary tests for anaesthesia, such as the corneal reflex and pupil reflex, are not valid in cases of electric excitation like that under consideration, and that the first effect of the application of current through the brain is extreme excitation of the nervous system. The work of Roos and Koopmans is not yet complete, but it deserves to be closely studied by physiologists and humanitarians, many of whom have jumped too optimistically to the conclusion that the word "stunning" can appropriately be applied to this method.

Humanitarians have given a good deal of attention to the devising of humane means for destroying unwanted cats and dogs. That this problem is not a small one can be seen from the fact that substantially more than 100,000 unwanted animals are destroyed every year. Further, a committee of the National Veterinary Medical Association, on which men of the highest distinction in their profession were kind enough to serve, recently devoted two years to careful study of the subject. Time does not permit me to go into details of the committee's report; I will only say that it is a most valuable contribution by men of science to the cause of animal welfare, and pass on to a topic with which it does not deal quite satisfactorily.

In recent years the use of electrocution has become increasingly common. Now a very important series of researches has been carried out in America for the purpose of ascertaining the cause of death in cases of electric shock, and they enable us incidentally to tell when electrocution is humane and when it is cruel. The results of these researches are so conclusive that we must feel bound to accept them. Unfortunately, having appeared in an engineering journal and being scarcely intelligible to anybody but an electrical engineer or a physicist, they have been almost entirely ignored both by veterinary surgeons and by lay humanitarians. These researches have shown that electrocution may be either humane or extremely cruel according to the current-strength or amperage, and it must be remembered that,

with any given electrocution apparatus, the amperage will vary from animal to animal according to the state of the coat and other conditions affecting contact resistance. If the amperage is sufficiently high, death is caused by stoppage of the circulation as a result of ventricular fibrillation; in this case we may probably assume that death was humanely caused. If, on the other hand, the amperage falls below the required minimum, the animal is merely thrown into a state of cramp or tetanisation, in which it can neither move nor scream, and it dies eventually from suffocation. The only way to tell whether the electrocution apparatus is killing by the one mode or the other is to have an ammeter in circuit with the animal and to note whether the ammeter readings exceed the prescribed minimum. This, for a medium-sized dog, should not be less than a quarter of an ampere. The electrocution apparatus at present in use in various places in this country never has an ammeter fitted to it. Nobody can say what current is used, or whether the animals are being humanely killed or tortured to death. Incredible as it may seem, all efforts to persuade the users of this apparatus to insist on the fitting of ammeters have completely failed. The scientific knowledge is there ready for use, but it has been impossible to get it across to the lay public.

It is not generally realised by townsmen that many millions of operations are performed upon farm animals every year without anaesthetics, and that the Animal Anaesthetics Act of 1919 does not apply to sheep or swine. Further the schedules appended to that Act badly need revision, since some of the operations scheduled for the use of a general anaesthetic can now be more humanely carried out by means of a local anaesthetic. The revision of the schedules could be carried out by Order in Council, no new legislation being necessary for the purpose; and this is a question which U.F.A.W. hopes to take up in the future. There is, however, a large class of operations which at present are not, and for reasons of economy are not likely to be, carried out under anaesthetics. The most important of these are the neutering of male farm animals and the tailing of lambs. The practice of cutting out the ovaries from sows, which has always been done without an anaesthetic and by unskilled practitioners, does not now appear to be general, though it was certainly practised some years ago and probably still is practised in some districts.

The problem of neutering male animals is an economic one. It is usually carried out by unqualified practitioners—farm hands and shepherds—and it may be doubtful whether such practitioners could effectively use an anaesthetic even if the farmer could afford to pay for it. An instrument known as the Burdizzo Castrator has been introduced for cattle and sheep, but is impracticable for swine. While its use must be attended by some pain, it marks a distinct improvement on the knife. For various reasons, however, it has not come into very general use.

One of the most beneficent contributions which applied science has recently made to the cause of humaneness has lain in the production of calcium cyanide dust for the destruction of unwanted rabbits and rats. U.F.A.W. has published so much on the subject of trapping, which exists mainly in connection with the rabbit-trapping industry, that I need not enlarge upon the cruelty involved. I will only say that if the rabbit-trapping industry could be abolished in this country, nine-tenths of the suffering endured by animals would go with it. Our noble Chairman has recently introduced a Bill which ought, if it passes successfully into law and is duly administered by the appropriate authorities, to go far towards the suppression of this most harmful and most barbarous industry. In any event, an efficient means of destroying rabbits is needed, for rabbits must from an agricultural point of view be regarded as a pest and not as farm stock or as an asset to the land [unless perhaps, in small numbers, one to an acre or two, for the advantage of the local farm hands and poachers.] Now in calcium cyanide the chemists have supplied us with means for destroying rabbits and rats which not only is immeasurably more efficient than any other means previously invented but also is perfectly humane. Such a combination of qualities in a commercial product is rare, but we may fairly claim it from Cyanogas, Calcid and Cymag. In the destruction of rabbits and rats cyanide dust is blown into the holes inhabited by these animals, and, unlike the sulphur fumigants, for some hours afterwards it continues to give off its poisonous gas. A small concentration of this gas (HCN) has no effect, but as soon as symptoms begin to appear death follows rapidly and painlessly. An animal which has received a dose that has not proved fatal quickly and completely recovers on reaching the open air. Thus cyanide fumigation is entirely free from the strong objection which lies on humane grounds against sulphur fumigation. When a sulphur candle is burned and sulphur dioxide is pumped into a rabbit hole, any animal which gets a mild dose contracts inflammation of the lungs and dies a rather horrible death similar to that inflicted by the chlorine which was used in the earlier German gas attacks.

I wish to conclude this address with an appeal to chemists to solve a difficult problem which has hitherto received scanty attention. For destroying harmful wild animals—principally rodents in this country, coyotes in the United States and Canada—it is a common practice to use edible poisons. It happens that the available poisons, with the possible but uncertain

exception of red squill, kill in an excessively painful way, and those which may legally be used in this country under the Poisons Rules take a very long time to kill—anything from three to six days. Professor J. G. Wright, in a lecture which has been published by U.F.A.W., has discussed the effects of various poisons and has hinted at the possibility of devising a humane substitute. He has suggested that a combination of certain of the known poisons with narcotics might have the advantage that the toxic action of the former on the liver would increase the narcotic action of the latter. The combined action might prove to be a cumulative one, the aim being that narcosis should supervene while the more potent poison is exercising its destructive action. Will not some chemist take up this problem of devising a humane and effective edible poison and bring to bear upon it the same enthusiasm and skill that has given us dynamite, insulin and nembutal?

Is there any sufficient reason why science should not spare a little of its attention specifically for the advantage of animals? What reason can be advanced? Is it that animals have no votes? Science is above the petty wire-pulling of political partianship. Is it that they have no money? If money-making were the object of the research worker, most of the university laboratories would long have been out of business. Is it because animals are not so intelligent as ourselves? That only increases their need for our help. Is it that animals are less lovable than human beings? Anybody who generalises in such a sense must have looked at human history through rose-tinted spectacles. At all events, U.F.A.W. appeals to scientific men in our universities to be generous enough to devote some part of their thought and effort to means for diminishing the hardships to which animals are subjected in their contacts with human civilisation.

FOOT-AND-MOUTH DISEASE

An outbreak of foot-and-mouth disease has occurred at Whitstable, Kent, and the customary order has been issued.

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The whole of the Kruger National Park, as well as that portion of the Zoutpansberg district which is bounded by the Pafuri River, has been declared a foot-and-mouth disease infected area.

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A Cheshire farmer has been fined £10 for cruelty to cows by twisting their tails. It was stated that of the 20 cows examined no fewer than eleven were found to be suffering from broken tails.

The Veterinary Record

March 4th, 1939.

The Award of the Goethe Medal to Professor Theodor Kitt

NEWS of the award by the German Führer and Reichskanzler of the Goethe medal for Art and Science to our illustrious German contemporary, Professor Theodor Kitt, of Munich, on the occasion of his 80th birthday in November last, notified in our issue of February 25th, will be received with rejoicing by his British colleagues. The award, we understand, is one that is very rarely bestowed and represents a most remarkable honour in Germany to the recipient. It is conferred for long and outstanding achievement in the fields of literature, art and science. In the course of his long and industrious life Professor Kitt's work has been devoted to an almost unrivalled degree to enriching the literature of veterinary science. We recognise in this rare honour a tribute to the standing of the veterinary profession in Germany to-day.

Elsewhere in these columns we refer with great appreciation to the magnificent contributions which Professor Kitt has made to the cause of veterinary science.

MAKERERE COLLEGE

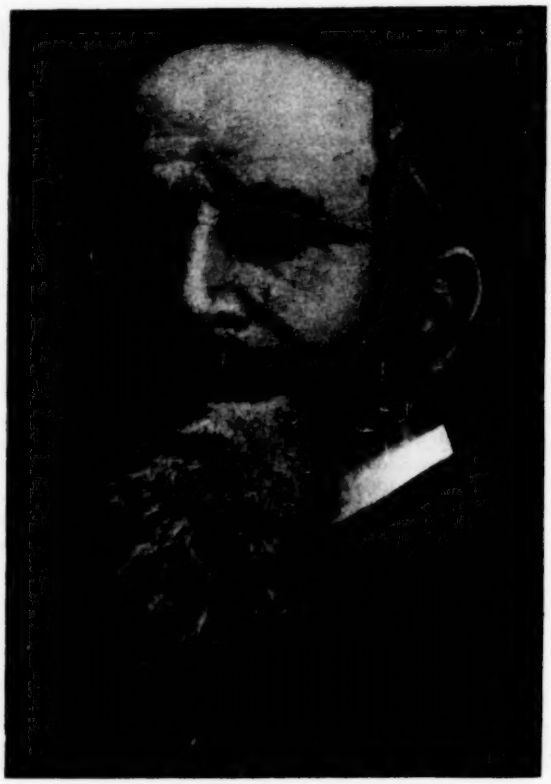
In the House of Commons on Thursday of last week, on a vote of £3,044,710 for Colonial and Middle Eastern Services, a token sum of £10 was included for the Higher College at Makerere, East Africa. The establishment of that college was a great step forward in the development of education in East Africa; and had aroused a great deal of interest and support. The native Government of Uganda had voted £10,000 in support of the college; it was possible that the native administrations of Kenya and Tanganyika would give support; and the Empire Cotton Growing Association were making a gift of £10,000 towards the building of a biological laboratory. The cost of the main building was being borne by the Government of Uganda. It had been recommended that a fund of £500,000 should be raised. The Government of Uganda had contributed £250,000 towards this endowment fund, Tanganyika £100,000, and Kenya £50,000 (subject to the approval of the Legislative Council); and it was proposed that the United Kingdom should complete the sum by contributing £100,000. Payment was not required in the current financial year, but the Government had put down this sum in order to obtain Parliamentary approval to the grant.

BIOGRAPHICAL ARTICLE

Professor Theodor Kitt

THE AWARD OF THE GOETHE MEDAL

In our editorial columns we have to-day referred to the great honour recently bestowed on our illustrious colleague Professor Theodor Kitt. We now take the opportunity to describe some of the activities that have led to the high standing in which Professor Kitt is held throughout the world.



For rather more than half of his lifetime Professor Kitt has been an Honorary Associate of the Royal College of Veterinary Surgeons, an indication of the extent to which his colleagues in this country have appreciated his outstanding merit. To a younger generation of veterinary graduates a few words may be necessary to suggest the measure of the gratitude we owe to Professor Kitt and the scope of the achievements which have so worthily brought him world-wide renown. It has been said, indeed, that the literature of modern veterinary science became established pre-eminently through the writings of Fröhner, on the clinical side, and Kitt on the pathological side.

Born in Munich on November 2nd, 1858, Theodor Kitt received his veterinary training at the Munich school, qualifying in 1879. Shortly afterwards he was appointed to a junior post at this school, and came there during his early formative years under the influence of three exceptional men; Bollinger, the eminent pioneer medical scientist who contributed researches in veterinary bacteriology, Ludgwig Franck, the distinguished veterinary anatomist, and Bonnet, the embryologist. In 1884, Kitt assumed, at the early age of 25, the lectureship in veterinary pathology. The post was raised to the dignity of professorship, and the school became, in 1915, a faculty of the University of Munich. He retired in 1932.

To the veterinary world at large Professor Kitt has long been best known for his text-books on veterinary pathology. These comprise: "Uses and Abuses of Preventive Inoculation in Animal Diseases," 1886; "Bacteriology and Pathological Microscopy," 1889 (which became a standard work in Germany and by 1908 had run through five editions); "Textbook of Pathological Diagnosis for Veterinary Practitioners and Students," in two volumes, 1885 (this work was the foundation of his largest classical work on the Pathological Anatomy of Domestic Animals, which is now in its fifth edition, in three large volumes); and "General Veterinary Pathology," 1904 (this classical work, the first comprehensive treatise of its kind, had run through six editions by 1929). Some of these works have been translated into several languages. Kitt's authoritative contributions on veterinary subjects in several standard large German works of reference are also well known. With Fröhner, he founded and edited the German veterinary periodical, *Monatshefte für praktische Tierheilkunde*, which for several years had a distinguished career. To specialist workers, Kitt has been no less well known as an original research worker, the total number of his papers nearing three hundred, ranging through almost the whole field of veterinary pathology and bacteriology, and containing many pioneer contributions on subjects of prime interest to the veterinarian.

This prodigious output of sound veterinary pathological literature, much of which has attained standard and even classic rank, can be traced to several circumstances. Firstly, the early moulding of the author's career, in the hands of such masters as Bollinger, the microbiologist, and Franck, the expert in normal and morbid anatomy, was particularly fortunate.

Secondly, the beginning of his career coincided with the rich harvest period in veterinary research which followed the discoveries of Pasteur and Koch; and, in Germany, it was Schütz of Berlin, Johne of Dresden, and Kitt of Munich who first reaped it, abundantly, within the field of veterinary research. Thirdly, Kitt used to the full the opportunities afforded by his position at the Munich veterinary school on the one hand to investigate the wealth and variety of morbid material which was made accessible to him, and on the other hand he developed assiduously his gifts of exposition to such a degree, we are told, that his students were taught in light and happy vein what were the essentials of the subject to fit them for their general career as practitioners, little suspecting that their teacher was a man of the deepest and widest learning. With an exhaustive knowledge of current literature, Kitt's writings, therefore, displayed a rare literary excellence inasmuch as they bore the impress of critical analysis from a comparison by direct observation of the subjects under description, a vivid recollection of the unfolding events in major veterinary discoveries, and a genial and lucid choice of language from long experience in oral reporting. From his classes there have emerged many veterinary pathologists of high rank, such as Ernst, Fortner, Hobmaier, Kögel, Seifried (his successor), and others. Throughout his career at the Munich veterinary school, however, the material resources in the shape of equipment and buildings at his disposal would be adjudged, according to modern standards, as woefully inadequate, but his genial enthusiasm and serenity triumphed always over these handicaps.

As a personality, Professor Kitt presents a tall, distinguished, and cultured appearance, and to those who have been privileged to come into contact with him or work with him, he has left an abiding impression as a communicative, approachable man with a rich fund of original anecdote and humour, with most catholic tastes in art, science, music and literature, and with an exquisite sense of the beauty of nature. His original illustrations to his veterinary writings testify to his skill as an artist. He finds his chief physical recreation as a fisherman. Throughout a period of over 50 years he received the happiest support and devotion in all his projects from his late wife. Although he has remained throughout his life keenly interested in all matters affecting the progress and standing of the veterinary profession, he has personally taken no active part in professional movements, preferring to contribute to the advancement of the profession in the way in which he thought the best to exercise his natural talents, namely, by placing at the disposal of the profession a store of sure knowledge upon which to advance its claims to recognition. For what he has done in this direction, veterinarians the world over have reason to be deeply thankful, and all will join now in extending to him their best wishes for his good health and happiness.

CLINICAL COMMUNICATIONS

Differences in Clinical Pictures of Transit Fever and Haemorrhagic Septicaemia

J. P. PICKERING, M.R.C.V.S.,
HEXHAM, NORTHUMBERLAND

I am encouraged to send you these clinical notes, in an effort to draw a clear distinction between the two conditions, transit fever and haemorrhagic septicaemia, by your footnote on page 66 of the *Veterinary Record* of January 21st.*

Transit fever is very prevalent in this district and occurs in cattle recently imported from Ireland.

The writer's experience of haemorrhagic septicaemia is limited to two outbreaks which he observed when he was acting as assistant to W. A. Campbell at Boroughbridge (careful notes were taken at the time). The more serious occurred in January, 1934, and at this outbreak Colonel Bowes was called in and carried out the bacteriological examination at Leeds University.

To facilitate comparison, the respective features of the two conditions are set in parallel below.

* [Our contributor's reference is to the following footnote appended to the article "Transit Fever: A Short Clinical Survey," by Mr. James Anderson, of Keith, Banffshire: "The condition dealt with by Mr. Anderson appears to be identical with that described by Shirlaw as haemorrhagic septicaemia (Shirlaw, J. F. (1938): 'On the existence of haemorrhagic septicaemia in the British Isles.' *Vet. Record*. 50. 38. 1005-1009), and upon which we published an editorial article (same issue, p. 1017)." While the bacteriological examinations reported in Mr. Pickering's paper were not sufficiently exhaustive to demonstrate the existence or otherwise of actiological differences between the two conditions—in point of fact, they are well known to occur as different manifestations of the one disease—the author has displayed the clinical differences very clearly.—*Editor.*]

Transit Fever	Haemorrhagic Septicaemia
Description.	
A catarrhal, febrile disease of cattle frequently complicated by lobar pneumonia and/or gastro-enteritis.	A general septicaemia.
Susceptibility.	
The disease affects store cattle of any age which have recently been imported from Ireland.	Affecting English-bred fattening cattle in the fold-yard.
Ætiology.	
Unknown. The writer is of the opinion that the causative agent may be a virus which predisposes to secondary bacterial infections.	Bowes reported that numerous bi-polar organisms were found in the exudates — pericardial and pleural. (Whether the organisms tested revealed pathogenicity is unknown to the writer.)
Incubation Period.	
Apparently approximately 14 to 18 days after the animal is landed from boat.	?
Symptoms.	
Onset gradual and vague. The animal is listless and is disinclined to eat. The temperature ranges between 104° and 107°. The pulse is rapid but quite strong. Respirations are somewhat accelerated. There is constipation. The mucous membranes are of a uniform, salmon-pink colour. A clear catarrhal discharge from the nose is in evidence and tears run from the eyes. From this stage the animal may recover uneventfully, the discharges becoming thick and forming scabs.	The onset of the disease is very rapid. The animal is obviously in great pain: a dull soft grunt is almost constant. It stands with elbows turned out and head thrust forward. There is a marked oedematous swelling in the region of the throat. The respirations are accelerated, the temperature ranges from 102·5° to 106°, and the pulse is very rapid and weak. The mucous membranes are injected. Auscultation reveals the heart rate to be rapid: sounds may be very indistinct (pericardial effusion). Over the whole of the lungs the sounds are reduced in intensity—there are no distinct areas of solidification.
Course.	
Perhaps seven days	Very short: six hours to three days. In the longer course black, bloody faeces—not watery—are passed.
Complications.	
Respiratory form.—Signs of involvement of the lungs appear. Auscultation reveals a lobar pneumonia with distinct areas of consolidation. A dry pleurisy is sometimes co-existent. The death rate is highest in this form. Course three to 21 days. *Gastro-intestinal form.*—In this form the condition of the animal usually is rendered much worse by the administration of linseed oil or Epsom salts to counteract febrile constipation. A pronounced short, sharp grunt develops. Pressure on the region of the abomasum causes pain. Diarrhoea sets in, the faeces being very liquid, though the colour remains normal. Often mucus is passed, and occasionally clots of blood. It is more amenable to treatment. Course four to 14 days. Both complications may be co-existent.	Mortality.—100 per cent. of affected animals over a small number. Some were slaughtered in the hope of a measure of salvage.
Post-mortem Examination.	
Findings depend upon the complications present, but usually there is revealed lobar pneumonia with distinct areas of hepatisation. There is no oedema of the lungs. Deposits of fibrin are present on the pleura, their extent depending on the degree of pleurisy present.	Findings depend upon the course of the disease. *Six-hour Course.*—Intense inflammation of the abomasum and small intestine. The lungs are very deeply congested—almost black. Fluid is abundant in the pericardium. *Three-day Course.*—

Transit Fever	Haemorrhagic Septicaemia
The abomasum is inflamed — a uniform purple discoloration of the mucous membrane and a catarrhal discharge. The small intestine is fairly uniformly discoloured. There may be catarrhal inflammatory changes in the large intestine if diarrhoea has persisted for some time. The presence of some red-stained serous peritoneal fluid is noted. The liver is pale.	There is an abundant reddish serous pleural exudate. The lungs show diffuse bronchopneumonia with considerable oedema between the lobules. The pleura and pericardium show petechial haemorrhages. Peritoneal fluid is abundant. The reticulum, abomasum and small intestine are inflamed. Petechial haemorrhages are seen on the peritoneal surfaces. The caecum shows very intense inflammation, and the bowel contents are almost pure blood. The liver is light in colour and fat globules are present. From macroscopic examination fatty degeneration appears to be in progress.

Very recently we had an outbreak of haemorrhagic septicaemia here, the outbreak occurring among Galloway breeding cows on the hill pasture. Three animals were involved, two being found dead and reported as "suspected anthrax." Another was ill and soon died. A careful *post-mortem* was made on this animal and the usual haemorrhagic septicaemia findings were in evidence, the petechial haemorrhages on the serous membranes being particularly abundant and widely distributed.

The owner of these three animals informed us that it was no uncommon thing for his men to find dead wild deer on these pastures. By arrangement with him we had the next deer carcase sent to a laboratory. The report received was that bi-polar organisms were found, but they could not be proved pathogenic to laboratory animals.

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Haemorrhagic Septicaemia in Cattle

K. D. DOWNHAM and T. B. YARROW

There has been some conflict of opinion in the past as to whether bovine pasteurellosis does or does not occur in this country. It is our opinion that when certain factors operate this disease does occur. An account of an outbreak which occurred in South Shropshire last August may be of some interest.

A Hereford calf, aged about 7 months, was seen on August 6th, 1938; it had difficulty in breathing, inco-ordination of movement and a temperature of 106·4° F. The animal was treated for pneumonia. When seen next day, there was considerable oedema of the submaxillary and throat regions, the temperature was 105·6° F. The following day there was slight improvement in the animal's gait, respirations were short and frequent, and there was definite evidence of pneumonia. The animal remained in this condition for several days during which time small haemorrhages were observed in the nasal and buccal mucous membrane.

On August 13th, an aged Hereford cow was found down, grunting and in great distress; half-an-hour later the animal died. She was reported as a case of suspected anthrax but was found negative to this disease. Bracken poisoning, if such a condition occurs, was suspected as the herd had access to bracken and the herbage on the pastures was extremely short.

Post-mortem examination showed large haemorrhages in the musculature, acute haemorrhagic enteritis particularly affecting the large intestine, acute congestion of the lungs with petechial haemorrhages on the pleura and endocardium. Microscopical examination of smear preparations taken from the mesenteric glands showed large numbers of pasteurella organisms to be present.

The next day another cow was found dead in the morning.

Microscopical examination of a blood smear showed large numbers of bipolar organisms to be present. *Post-mortem* examination of the carcase was similar in most respects to the previous one. The subcutaneous and deep muscle haemorrhages were if anything more extensive and petechial haemorrhages were seen on the serous surfaces of the visceral organs. Acute congestion of the lungs with gelatinous exudation in the inter-lobular septa was present.

Microscopical examination of the blood, spleen and lymph glands showed large numbers of pasteurella organisms to be present.

Laboratory animal inoculations: One rabbit received 1 c.c. of a saline emulsion of popliteal gland injected subcutaneously. Twelve hours later this animal was found dead.

A second rabbit received 0·25 c.c. of popliteal gland exudate injected subcutaneously. This animal died twelve hours later.

One guinea-pig received 0·5 c.c. of a saline emulsion of mediastinal gland tissue injected intra-peritoneally. This animal died within twelve hours.

Another guinea-pig received 1 c.c. of a saline emulsion of mediastinal and mesenteric gland injected subcutaneously. This animal died 36 hours later.

Pasteurella organisms were recovered from the heart blood, spleen and liver of all the above animals.

Cultural examination of the heart blood and bone marrow of all the laboratory animals showed pure cultures of a pasteurella organism to be present.

Bacterial cultures sown from the spleen, popliteal and mesenteric glands taken from the carcase of the Hereford cow resulted in the production of a pure culture of pasteurella organisms.

Post-mortem examinations of the laboratory animals showed typical haemorrhagic septicaemia to have occurred with an acute haemorrhagic area around the site of the subcutaneous injections.

All the animals on the farm received a dose of haemorrhagic septicaemia bacterin. The Hereford calf referred to previously showed slight improvement for a day or two and then went down, became progressively worse and was killed *in extremis*.

Post-mortem examination showed pneumonia to be present with congestion of the various organs, the lesions being similar but not so acute as those found in the other cattle.

No further losses occurred in this herd.

This outbreak is similar to several others which have occurred in the district.

THE FIRST MILKING MACHINE

"Farm labour shortage of present times has put an end, more or less, to the old controversy of whether hand milking of cows is better than machine milking," says the *North British Agriculturist*. "In the past, quite a few farmers tried the machine only to fall back on the age-old method, but then the machines were not the perfected articles they are nowadays. Moreover, dairy farmers have had perforce to turn to the machines whether they like them or not. The hand-milkers simply cannot be got.

"In these days, therefore, when the use of the machine is legion, it is rather interesting and refreshing for a reminder to crop up of the old pioneering days. How many present-day dairy farmers know when the first working mechanical milker was originated in Scotland and who the originator was?

"Well, he still lives. The honour is due to veteran William Murchland, a sanitary engineer, now living in retirement at Dundonald Road, Kilmarnock, and who has just presented a model of his first milking machine to the West of Scotland Agricultural College at Blytheswood Square, Glasgow, where, no doubt, it will be greatly treasured as a relic of the past. The development of electricity and the introduction of many other improving factors have changed the mode of working, but Mr. Murchland certainly did a great service to the dairying industry when he demonstrated the tremendous possibilities that lay in mechanical milking. After a long period of experimental work, Mr. Murchland installed his first milking machine on the farm of Mr. David Shaw, Dykehead, Hurlford, near Kilmarnock, in the year 1888—half-a-century ago.

ABSTRACTS

[Sterility in Mares at the Breeding Centre of Eastern Austria. (Trans. title.) BENESCH, F. (1938.) *Deuts. tierärztl. Wschr.* **44.** 692-694.]

Studies were made on a total number of 902 mares. It was found that in 158 cases of pregnancy 96 per cent. could be definitely diagnosed at the end of the second month by vaginal examination. In the odd 4 per cent. rectal examination or the use of the mouse test for the blood hormones revealed pregnancy. In some cases mares which were considered sterile as they had continued to show oestral periods were found on examination to be pregnant, and the authors emphasise the importance of complete manual examination before considering any mare is not pregnant.

22·3 per cent. of the mares were sterile without any pathological cause being visible on vaginal examination. The causes may be anatomical, such as insufficient opening of the cervix, etc., but it is probable that a number are due to the fact that mares may not have been covered at the correct time. This is thought to be a common cause of non-pregnancy and must always be considered.

Approximately 50 per cent. (352) suffered from a catarrhal endometritis. Of these, 237 were mild cases, 96 medium and 19 severe. The light cases responded to the usual injection treatments, the medium cases usually had a history of abortion, retention of cleansings or difficult foaling or, in the case of young animals, were due to a streptococcus infection. In most cases of medium severity, especially those of older animals, the prognosis was unfavourable. The severe infections were cases of pyometra.

The remainder of the 900 were grouped as follows:—

(*a*) Hypoplasia of ovaries with or without hypoplasia of uterus: 38 cases comprising animals from eight to 16 years old which had never bred and some which had had only one or two foals at long intervals.

(*b*) Scirrhosis of the ovaries: 28 cases; mares from 12 to 20 years old—some had had foals, others had not.

(*c*) "Subfunctioning of the sex glands" 52 cases. Diagnosed by irregular oestrus, nymphomania, etc.

(*d*) Tumours of the ovaries or oöphoritis: three cases. In one of oöphoritis it was noticed that during oestrus the mare passed urine frequently and was extremely sensitive in her hind quarters.

(*e*) Carcinoma of the ovary: one case. Cured by castration of the ovary as only one was

affected (this was about the size of a child's head).

(*f*) Of 16 cases in which it was alleged oestrus was not occurring, two were found to be pregnant and the others, in most cases, to have no particular cause for the suppression of oestrus.

(*g*) A urovagina was encountered in eight cases, atony of the uterus in six, three were examined while still in the puerperium, four could not be examined owing to vice, and a number of others suffered from bodily defects such as old age and infirmity.

During the investigation it was found that the duration of oestrus was as follows:—

	Animals
1 to 2 days	64
2 to 3 days	108
3 to 4 days	84
4 to 5 days	88
7 to 9 days	142
Duration unknown	58
Constant oestrus	16
Never in oestrus	12
No oestrus after foaling... ...	15
Very heavy oestrus	38
Very slight oestrus	48

The interval between oestral periods was:—

	Animals
6 to 9 days	32
9 to 18 days	78
10 to 12 days	36
Exactly 14 days	102
14 to 21 days	31
21 to 28 days	252
28 to 42 days	35
Irregular	24

P. S. W.

* * * * *

[A Clinical Method of Diagnosing Pregnancy in Mares and Cows. Farinas, E. C., Gapuz, R. M., and Fernandez. (1938.) *Philip. J. Anim. Indust.* **14.** 5. 39-59.]

This article describes certain changes occurring in the vagina and cervix of mares and cows during pregnancy, and by means of which it is claimed that an accurate diagnosis can be made before the fortieth day of gestation. The technique consists in a visual examination of the vagina and cervix with the aid of a speculum, and of palpation of the cervix with bare fingers in order to determine the consistency of the mucus. The following observations are described by the authors as indicating pregnancy:—

(1) "The mucosa of the vagina shows signs of dehydration; it becomes whitish, blurred or opaque in colour instead of pinkish, slimy-glistening, giving a desiccated and sticky sensation to the touch; when gestation is advanced, the walls of the vagina may be glued together by a gelatinous mucus in the cow and a gummy mucus in the mare."

(2) "The mucosa of the external *os uteri* becomes pale, opaque or blurred and not slimy; if touched with the finger tip it is sticky. The degree of stickiness of the external *os uteri* increases to gummy at the later stages of pregnancy. The presence of the cervical plug or seal is a decided sign of pregnancy; its absence, however, does not mean the reverse."

Other positive signs of pregnancy are the marked enlargement of the posterior branches of the uterine artery supplying the vagina, the presence of folds of mucous membrane covering the *os uteri*, and constriction, firmness and deflection of the cervix.

The authors give the result of their examination on 27 mares and 20 cows. [In too many instances the diagnosis was not checked by other available means.] They claim to have made a correct diagnosis in pregnant brood mares as early as the ninth day after service.

N. J. S.

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[Reduction of Alfalfa Impactions in the Floating Colon of the Horse by Massage. Miller, N. J. (1938.) *J. Amer. Vet. Med. Assoc.* **93.** 2. 105-107.]

The large colon in the horse where it joins the small colon is somewhat constricted or funnel-shaped. Consequently ingesta passing along the alimentary tract is compressed at this point, and is literally forced from one section of the gut to the other. It is readily understood, then, why this should be a point where impaction readily occurs.

Horses fed on certain foodstuffs such as alfalfa, clover hay, pea hay, etc., are more prone to impaction than those that are not. Symptoms are not unlike those of flatulent colic, and diagnosis can only be made with certainty by rectal examination, when the faecal mass can be palpated after careful exploration. It may be necessary to overcome spasm and rigidity of the small colon, but this can be done by means of warm water enemata, and lubrication of the operator's arm. If gas in the large colon and caecum interferes with rectal exploration, it should be relieved by means of a trocar and cannula, or by tapping the large colon through the rectal wall, using a large hypodermic needle.

Having discovered the impacting mass one attempts with all due care and precaution to break it down by massage through the rectal wall. Escape of gas and relief occurs simultaneously with its breakdown.

C. F

[Studies on the Normal Variations in the Strongyle Egg Count of Horse Faeces. Britton, J. W. (1938.) *Cornell Vet.* **28.** 3. 228-239. 2 tables. 2 graphs. 18 refs.]

Egg counts taken from 150 horses, picked at random in New York, Connecticut, and California, just prior to slaughter, showed low counts between February and March and the high counts in August and September. The details of three groups of horses whose faeces were examined over periods ranging from three days to nine months are given. In the main the results bore out the conclusion given above, but occasionally a wide variation was noted from one week to the next. This was thought to be due to the fact that the egg-laying females show periods of cessation of egg production followed by increases in production. It should be borne in mind, therefore, that a low or a negative faecal egg count does not necessarily mean a light infection, and such judgment should not be passed until several low counts have been recorded.

The author has confirmed the findings of other workers that the degree of parasitism in horses increases from birth to three years, then remains comparatively steady until the age of ten years, after which there is a gradual decline. The spreading of faeces on the pastures during hot dry months is lethal to all forms as is freezing and thawing during the winter, providing the thaw period does not exceed two weeks. Freezing alone will not affect the eggs, which hatch out normally in the spring. Increasing the number of horses per acre and close cropping of the herbage increases the chance of infection. The author suggests that the best time for the treatment of horses is in the spring, when there are but few migrating larvae in the host's tissues to return to the colon as mature worms.

J. S. P.

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[Studies on the Control of Poultry Cestodes Davainea proglottina (Dav.) Levine, P. P. (1938.) *Cornell Vet.* **28.** 3. 220-227. 1 table. 17 refs.]

That much of the work previously carried out on the subject shows a marked lack of agreement, is explained by Levine as being due to inaccurate and inadequate techniques. Levine infected parasite-free chickens with *D. proglottina* and estimated the number of scolices in the intestines and the number of gravid segments discharged in the faeces. The procedures adopted are to be described in another paper. He found that one tapeworm, under optimum conditions, will produce not more than one gravid segment per day, and consequently a count of the segments discharged in one day will give a fair estimate of the degree of infection. Infected chickens were dosed with 15 common taenicides, together with five proprietary taenicides. In no instance was the treatment successful although ground areca nut removed some scolices.

Neither tobacco dust (2 per cent. by weight) in the mash nor copper sulphate (1 in 500) in the drinking water prevented infection.

Under severe winter conditions in the field the author found that slugs (*Agriolimax agrestis*) containing cysticercoids of *D. proglottina*, survived and proved capable of infecting chickens the following summer. However, in the laboratory, refrigeration at −1°C. for 24 hours killed both slugs and cysticeroids, although both survived when kept at 3°C. to 5°C. for eight days. It is to be assumed, therefore, that the infected slugs which survived the winter had hibernated in places which protected against actual freezing.

J. S. P.

REPORT

[Canada: Department of Agriculture: Report of the Veterinary Director-General, 1937-38.]

In Canada the veterinary section of the Department of Agriculture is called the Health of Animals Branch, and is controlled by a Veterinary Director-General (Dr. G. Hilton). There are three divisions of the branch, namely, the Contagious Diseases Division under a Chief Veterinary Inspector (Dr. A. E. Cameron), the Meat and Canned Foods Division under a Chief Inspector (Dr. R. Barnes), and the Division of Animal Pathology under the Chief Pathologist (Dr. E. A. Watson). The work of the branch, as shown by this report, is concerned with the suppression of existing infectious diseases, the prohibition of disease from outside, the inspection of human food of animal origin, research and laboratory services.

The major animal diseases are tuberculosis and bovine contagious abortion, but an outbreak of equine encephalo-myelitis caused some concern during the year in two provinces. The country is free from foot-and-mouth disease (against the introduction of which very strict precautions are in force), dourine, rabies, swine fever and sheep scab. One outbreak of glanders, two of cattle mange and three of anthrax were all promptly dealt with during the year. Poultry diseases, including bacillary white diarrhoea, tuberculosis, fowl paralysis and infectious laryngotracheitis, are receiving considerable attention in Canada.

The work of eradicating tuberculosis and Bang's disease has now assumed considerable proportions and satisfactory progress has been made. It may be of interest to readers at home at this time to give a brief summary of what has been done there in eradicating tuberculosis. Official testing for tuberculosis has been carried on in Canada for nearly 50 years. For a time it was undertaken as educational propaganda and no compulsion was used. In 1903, however, an order was passed which provided for the branding of reactors, and although at first much opposition to the order was encountered, stockowners gradually realised its value as a safeguard against purchasing diseased animals, and public favour was later given to more progressive control measures. A policy known as the "Supervised Herd Plan" for the control of the disease in single herds was soon adopted. This plan is still in operation and has increased widely in recent years, despite the fact that reactors are slaughtered without compensation: there were 49,600 herds within the plan in 1938. In 1914-15 a further policy involving slaughter with compensation was introduced and called the "Municipal Tuberculosis Order." This was more of a public health measure than a serious effort at eradication and applied to the milking herds of the municipalities only, but as its advantages became known a demand for its wider application was made by pure-bred cattle breeders. Consequently in 1919 an "Accredited Herd Plan" was introduced and in 1922, following a public agitation for even more progressive measures, the "Restricted Area Plan" was adopted on lines like those applying in the U.S.A. This plan—now in wide operation—is applied area by area, usually a county or well-defined district, when two-thirds of the stockowners in the area petition for it. If the federal minister for the area approves, the area is then gazetted and compulsory testing with slaughter of reactors and compensation begins. The number of cattle tested under this plan during the year under review was 823,882 of which 10,924 reacted, but the total tuberculin tests made during the year were 1,409,000 under all three eradication plans. There were 8,000 herds containing 240,000 animals accredited at the time of reporting. It is estimated that the incidence of tuberculosis has been reduced from 5 per cent. in 1928 to 3 per cent. in 1938 in the Dominion as a result of these measures.

Bang's disease is being eliminated by a Single Herd Policy. There were 1,568 herds within this policy in 1938 of which 457 were listed as disease-free. When a herd is free of evidence of infection by the agglutination test for one year it is listed.

W. K.

Victoria Veterinary Benevolent Fund

MEETING OF COUNCIL

A meeting of the Council of the Victoria Veterinary Benevolent Fund was held at 10, Red Lion Square, London, W.C.1, on Wednesday, January 11th, 1939, when the following members were present: Messrs. H. W. Dawes, P. F. Dolan, G. H. Livesey, G. H. Locke, J. W. McIntosh, Mrs. M. S. Nickinson, Messrs. G. P. Male, A. Spicer, W. Woods, Mrs. E. M. Wooldridge, Professor G. H. Wooldridge, Miss V. Wragg and Captain W. G. Wragg.

In the absence of the President, Mr. G. P. Male (Vice-President) took the Chair.

The minutes of the previous meeting, held on October 5th, 1938, having been published, were taken as read and signed as correct.

Letters of apology for absence were received from Lieut.-Col. J. W. Brittlebank, Major F. L. Gooch, Major C. W. Townsend and Mr. W. Jackson Young.

Secretary's Report

The following report of the Secretary was read and approved:—

Since the previous Quarterly Meeting of Council the following new or increased subscriptions and donations have been received:—

Subscriptions

	£	s.	d.
Professor G. F. Boddie (increase of)...	0	9	6
Captain D. Campbell (increase of) ...	1	1	0
S. Jennings		10	6
R. B. Smith	1	1	0
W. F. White (increase of)	1	1	0
	£4	3	0

Donations

Collecting Boxes

	£	s.	d.	£	s.	d.
J. R. Baxter	0	10	0			
Major R. F. Bett	1	1	0			
Central Veterinary Society ...	0	14	8			
Major Frank Chambers ...	0	17	0			
J. L. Cormack	3	3	0			
A. Cornish-Bowden	0	6	0			
Derbyshire Veterinary Association	0	18	0			
C. Formston	0	10	0			
Major H. Gillmor	1	11	6			
Captain J. R. Hewer	1	0	0			
J. W. M. Hinton	0	16	0			
Mrs. C. G. Hopson	3	2	2			

DONATIONS

Collecting Boxes	£	s.	d.	£	s.	d.
Lincolnshire and District V.M.A.	1	0	0			
C. Masson	0	10	0			
Mid-West and South Wales Veterinary Association ...	5	10	0			
Northern Ireland Veterinary Medical Association ...	1	10	0			
North Wales V.M.A.	1	16	0			
Royal (Dick) Veterinary College	0	8	6			
Royal Counties Veterinary Medical Society	3	14	8			
Scottish Metropolitan Division	3	7	6			
Southern Counties Veterinary Society	2	0	0			
South-Eastern Veterinary Association	2	9	0			
James Storrar	1	1	0			
Henry Taylor	0	10	0			
Captain J. H. Thomson ...	2	0	0			
Western Counties Veterinary Medical Association ...	4	12	6			
A. Whicher	3	6	6			
Yorkshire Veterinary Medical Association	2	4	0			
W. Jackson Young	2	15	0			
				53	4	0
H. Bell				1	0	4
Major J. Facer				5	5	0
Mrs. D. P. Franklin (in memory of her husband)				10	10	0
Kennel Club (*per* A. Cornish-Bowden)				10	0	0
N.V.M.A. "At Home" balance, *per* A. Thomson				1	8	0
C. W. M. Park				1	0	0
V.V.B.F. Ladies' Guild				150	0	0
V.V.B.F. Ladies' Guild (proceeds of Dance)				78	10	0
E. G. Wood				0	10	0
				£311	7	4

It was resolved, "That the cordial thanks of the Council be conveyed to the respective donors."

CASES

132. M.R.C.V.S. Unemployed. Wife and two children have received help from the Officers' Association. The Executive Committee reported that they had made a provisional grant of £1 a week for seven weeks, and a special grant of 16s. to cover a claim for spectacles. The action of the Executive Committee was approved and the matter was left in the hands of the Committee with power to continue the grant, if found necessary.

150. M.R.C.V.S., aged 37. Unemployed. Has no means and apparently cannot obtain employment. This case was recommended by the Sub-Committee of the Veterinary Medical Association of Ireland, and a grant of 10s. per week for the present quarter was made.

185. Miss M. Aged 65. Has now been admitted to St. Monica's Home, Westbury-on-Trym. The Executive Committee reported that they had in consequence discontinued the grant as from December, 1938. The action of the Executive Committee was approved.

193. Mrs. D. Widow, aged 70. The Secretary reported that this widow was now receiving the Old Age Pension, and it was resolved that the grant of £1 per week be reduced to 10s. a week.

197. Mrs. C. Widow, aged 40. Five children. The Executive Committee reported that they had increased the grant of 10s. a week to one of 30s. per week on account of the fact that the recipient was in hospital and had lost her employment. The action of the Executive Committee was approved and the matter was left in their hands.

199. Mrs. G. Widow, aged 41. Eleven children under 17 years. An application was received for the continuance of the grant of £2 per week, and this was supported by the Special Committee of the Veterinary Medical Association of Ireland. It was agreed that the grant of £2 per week be continued for the present.

219. Mrs. G., wife of M.R.C.V.S. Paralysed for 18 years. Living with son. No help from husband. No grant was made in this case.

220. Mrs. K. S., aged 37. Wife of M.R.C.V.S. now in mental hospital. No income. The Executive Committee reported that they had made a provisional grant of £1 per week as from December. The action of the Executive Committee was approved, the grant to be continued for the present.

Hunting Memorial Fund.—The Secretary reported that the investments representing the Hunting Estate were now being transferred to the names of two trustees, namely, Sir Douglas Robinson, Solicitor to the late Mr. F. C. Hunting, and Mr. R. V. Thatcher, Solicitor to the Fund. An account for repairs and additions to the Hunting Memorial Stone amounting to £11 12s. 6d. was passed for payment.

Christmas Gifts.—The Secretary reported that he had received the sum of £37 2s. in response to his appeal, making, with the balance brought forward from last year, the sum of £41 8s. 3d., which had been distributed in grants of £2 and £1 to 38 recipients. A further £6 6s. has since been received which will be added to the next appeal.

Investments.—The Secretary reported that with the authority of the Treasurer he had invested the sum of £196 18s. 6d. in the purchase of £200 Conversion 3½ per cent. Inscribed Stock. The action of the Secretary and Treasurer was approved.

N.V.M.A. DIVISIONAL REPORTS

Midland Counties V.M.A.*

MEETING IN BIRMINGHAM

The quarterly meeting of the Midland Counties Veterinary Medical Association was held at the Grand Hotel, Birmingham, on Friday, December 16th, 1938. The President, Mr. H. W. Dawes, occupied the chair, and those present included: Dr. W. R. Wooldridge and Messrs. H. Yeomans, L. C. Tipper, J. A. McLauchlan, W. Scott, A. Fewings, T. B. Yarrow, J. R. Barker, W. F. Aston, J. W. Conchie, P. Crosfield, H. W. Steele-Bodger, P. N. C. Green, S. Jennings, B. DeVine, O. V. Gunning, W. H. Newey, J. A. J. Venn, J. Bayliss, J. B. Edwards, H. W. Griffiths and the Hon. Secretary, A. A. Forsyth.

Apologies for absence were received from Sir Gilbert Barling, Dr. L. Gamgee, Messrs. G. F. Banham, P. D. Baylis, W. Beddard, W. P. Blount, T. J. Brain, J. L. Brain, W. H. Brooke, W. G. Burndred, H. Burrow, C. J. Clifford, F. Chambers, T. Chambers, W. J. Dale, F. A. Davidson, A. W. Findlay, A. B. Forsyth, R. L. Green, T. C. Graves, F. L. Gooch, L. W. Heelis, T. H. Hobson, J. H. M. Hughes, H. Tudor Hughes, Richard Hughes, W. E. Ison, J. A. Lee, C. K. Lomas, J. Martin, Jnr., T. D. M. Martin, F. T. Martin, R. W. Mellard, R. P. Parsonage, C. F. Parsons, A. L. Phillips, J. Robertson, J. A. Robertson, E. Ringer, E. Brayley Reynolds, A. Renfrew, C. Renfrew, M. Sadler, B. Secker, P. G. M. Thompson, W. Trigger and S. M. Woodward.

Nominations and Elections.—The following members of the profession were nominated for membership of the Association: Mr. H. J. Hiles, Worcester; Miss Brancker, Sutton Coldfield; Mr. J. B. Edwards, Knowle; Miss Peake, Knowle; and Mr. S. V. Carr, Warwick.

The PRESIDENT said that Miss Brancker and Miss Peake would be the first ladies to join the Association.

The following, duly nominated at the previous meeting, were now elected members: Mr. J. M. Rorrison, Lichfield; Mr. W. H. Newey, Nuneaton; Mr. W. W. Gregor, Tamworth; and Mr. Lee, Tamworth.

Annual Dinner.—It was reported that the Council, sitting earlier in the day, had recommended that the annual dinner be held in the early part of February, preferably on a Wednesday, that a committee be appointed to make the necessary arrangements, and that the date, when fixed, be notified in the *Record*. This was agreed to, the committee being chosen as under: the President, the Hon. Secretary, and Messrs. Griffiths, DeVine, Woodward and F. Chambers.

*Received for publication February 1st, 1939.

Next Meeting.—The Council further recommended that the next meeting of the Association be held at the Royal Veterinary College, Camden Town, which was also agreed to.

The PRESIDENT recalled that it had been tentatively arranged to hold the present meeting there, but Professor Buxton had advised that it be deferred, as examinations were in full swing at the College at the time.

The meeting left the arrangements in the hands of the President and Hon. Secretary.

N.V.M.A. Officers.—The PRESIDENT referred with pleasure to the presence that afternoon of three of the most prominent members of the National Veterinary Medical Association—the President, Mr. DeVine, the President-elect, Mr. Steele-Bodger, and the Hon. Secretary, Dr. Wooldridge. The two first-named were old and esteemed members, as ex-Presidents of the Midland Association, which felt itself highly honoured. Mr. DeVine and Mr. Steele-Bodger were regular in their attendance, each being "one of themselves," but he would like to extend a hearty welcome to Dr. Wooldridge who was visiting them for the first time.

POULTRY COMMITTEE'S REPORT

Mr. K. D. DOWNHAM, of the Harper Adams College, gave a short address on the report of the Poultry Committee. He said that however critical he might be, he felt that it contained some valuable suggestions. In 1934, it was his privilege, as a member of the National Poultry Disease Advisory Committee, to give evidence before the Poultry Re-organisation Commission, which presented its report in 1935, recommending the appointment of a special committee. This Poultry Committee consisted of twelve members, and only one of them had any veterinary qualification. Need they wonder, therefore, at the unsatisfactory position of the poultry industry to-day? Would the medical profession have remained silent if a committee of twelve, appointed to consider some branch of medicine or surgery, was composed of eleven laymen and only one doctor? At least half-a-dozen men in this country with experience and knowledge of poultry disease control should have been asked to sit on that committee. The most important problem was the control of disease, but unfortunately the adoption of unsound building methods had resulted from the influx of inexperienced people into the industry.

Mr. Downham outlined the different headings of the subjects dealt with in the report, dwelling specially on the question of mortality among young birds. The most valuable data were furnished by *post-mortem* examinations carried out at the laboratory of the Ministry of Agriculture, and his own experience was that the loss caused by parasitic diseases was the most serious. Yet although the committee professed

to be appalled at the mortality among growing stock, no lead was given as to what measures should be taken to afford relief. There were many general statements in the report with which they could not help but agree, as, for instance, the suggestion that under present marketing conditions there was no adequate control from the health standpoint. That was where he hoped the veterinary profession would be asked to lend a hand. It was recommended that there should be statutory control, with financial assistance from the State. Further recommendations provided for a register of distributors and control of the hatcheries for the gradual improvement of breeding stock, with inspectors well qualified in poultry husbandry and able to judge of the suitability of birds for breeding purposes. One of the inspector's duties would be to decide whether a flock was kept under proper hygienic conditions, but the committee seemed to have gone out of its way to keep the qualified veterinary surgeon somewhat in the background. More people with specified knowledge of poultry diseases should be available. Apparently there would be, when the Commission was appointed, a panel of veterinary surgeons set up which would be responsible for visits to farms, on whose certificate they would be allowed to carry on. It was, therefore, up to the profession to put itself in a better position to take on this important work. They might not realise the fact, but the poultry industry represented many millions of money, and most of the loss that was suffered was due to disease.

"I would recommend to you," said Mr. Downham in conclusion, "the schemes which are about to be offered for refresher courses in poultry disease control, and if you are thinking of having one in this Division, I advise you to get a man well up in poultry husbandry to take one part of the course."

The PRESIDENT, in offering the thanks of the meeting to Mr. Downham for his address, moved that he be asked if he would submit a scheme to the next meeting of the Association for a short course of instruction in poultry matters for practitioners, to take place in the coming year.

Mr. TIPPER, in seconding, said he thought the profession had itself to blame for not being better considered by this Poultry Committee. "I remember," he said, "bringing this very question forward some years ago, and it was ridiculed as not being worth while."

Mr. STEELE-BODGER, referring to poultry hygiene and preventive measures generally, said it was a shock to be told that the report did not very much concern the veterinary profession, as it did not deal so much with diseases as with methods of hygiene and breeding. That seemed to show the official outlook in connection with the poultry industry and the veterinary profession. He was afraid that up to a point, Mr. Tipper was right in saying that they had only themselves to blame for not being more readily consulted in poultry matters.

Mr. MCLAUCHLAN said the chief trouble with the poultry industry was that all the cranks who had failed at everything else had gone into it, and they were the men whom the county councils appointed as instructors. In this way, people had got the idea that the man to go to for advice was the poultry instructor and not the veterinary surgeon.

Mr. DEVINE, in supporting the resolution, said he remembered the time when the veterinary surgeon could not be bothered to look at dogs and cats. He ignored them entirely, but was now glad enough to attend them, to his grea advantage. The same thing might happen in the case of poultry, especially after what Mr. Downham had told them of the millions of pounds involved. The annoying part of it was that the so-called poultry expert was consulted in preference to the veterinary surgeon, and that was a state of things which required altering. "I remember," added Mr. DeVine, "my surprise when I first came to realise how little I really knew about fur and feather. I began to take an interest in canaries, and it spread to other birds, and now I am often asked, though without taking a fee, to give advice to friends about their avaries. And so it is, looking at it from the point of view of the development of the veterinary profession, that I think we cannot afford to ignore the feathered world, as so many of us once did cats and dogs."

The President's motion having been unanimously carried, Mr. DOWNHAM intimated that he would be willing to accede to the request it contained. "We have," he said, "a lot of interesting things at the Harper Adams College which I should like you to see, if you could give a day to it."

THE LOVEDAY REPORT

The meeting proceeded to a discussion of the report of the Loveday Committee on Veterinary Education in Great Britain, and the President invited Dr. Wooldridge to introduce the subject.

Dr. WOOLDRIDGE, in doing so, said that one of the early criticisms of the Loveday Committee had been that the veterinary profession had not been sufficiently represented on it. Subsequently, he (the speaker) became a co-opted member, and although a better report might have been produced if there had been a bigger veterinary representation, he had the greatest admiration for the way in which the non-veterinary members went to endless pains to try and understand both the veterinary problem and the veterinary point of view. More than a year was spent in investigating those problems, the committee frequently sitting for a whole

day two or three times a week. The whole committee took an individual part in the very wording of the report, and they tried to make it free from unfortunate criticism by making it a plain statement of fact. The committee made sure of securing all shades of opinion, calling more witnesses than any committee dealing with veterinary problems had ever done. Thus they obtained the points of view of every section of the profession.

"To me," proceeded Dr. Wooldridge, "it is a great disappointment to find that there are certain eminent members of the profession who seem to think rather lightly of the report. Every question affecting individual schools, societies or the Royal College, as well as the attitude of the public to the profession, was hedged round with difficulties obscure and even prejudiced. We have tried to free the report from those failings. We have referred to an "inferiority complex," and some people have objected to the use of that term, but our reference is that it has been repeated to us that the veterinary profession is suffering from this. It was evident that no matter what a veterinary man thought himself, there were important sections of the community labouring under the impression that the veterinary profession as a whole was suffering from an inferiority complex. This, however, is one of the minor points in the report, and most of the major ones have been discussed in the journals of our profession. The obvious weakness in our system of education has been illustrated by the discussion earlier this afternoon, when we were told that the reason poultry instructors run the poultry world for us is because we have neglected as a profession the husbandry and the health side of our feathered friends. The curative side, the treatment of disease, in our profession does not offer all the facilities we might desire. We need not blame the Royal College for that. It is largely due to lack of money, and perhaps the most outstanding point in the report is that it recommends the Government to spend a quarter of a million on the veterinary profession, which has been so badly neglected in the past. We hope the Government will accept this recommendation, but it is not likely to do so if the committee's recommendations are not acceptable to the profession itself."

Dr. Wooldridge next referred to the proposal for a university degree in veterinary science. He believed that the reason for neglecting university co-operation in the past had been because it might endanger the one-portal system, but he saw no danger of that here. The Loveday Committee very carefully considered this question and came to the unanimous opinion that the one-portal system should be retained. At the same time, it was felt that the university influence in veterinary education should be extended, and so they had evolved a scheme for a three-years' degree based on the sciences which every veterinarian must know, followed by two years' training in vocational subjects. The degree was to be restricted to five universities, thereby stopping a flood of candidates coming in from all universities. This degree would be a degree in science, but like other scientific degrees, it would be in a special branch of science, and so would come under the jurisdiction of the Universities' Board of Veterinary Science.

"To me and my colleagues on this committee," said Dr. Wooldridge, in conclusion, "the report hangs together as a complete whole, and we feel that if any of the major recommendations come to be altered, the report would suffer seriously. This does not mean, however, that some details may not be open to reasonable adjustment. As I came here to-day unprepared to speak and certainly not prepared to open this discussion, you must excuse me if I have omitted reference to any matter upon which you think I ought to have spoken."

Mr. DeVine said that considering the importance of the veterinary profession, not only from an agricultural, but also from a public health point of view, it had been too long neglected by the Government. The appointment of the Loveday Committee was a welcome sign of Government recognition, and he was glad to see that financial assistance was being sought. Compared with continental countries, the veterinary profession in Great Britain had been starved by the Government, and as a matter of fair play it ought to have had some of the consideration shown to other professions. He thought "inferiority complex" was an unfortunate phrase to introduce into the report, as it was generally associated with a lack of personality. The report had been criticised because it was suggested that the universities which conferred veterinary degrees should be represented on the Council of the Royal College. The percentage of such representation, however, would be so small that it could not possibly influence policy. They should congratulate themselves on the intention to retain the one-portal system which enabled them to maintain the same standard of education throughout the British Isles. Nor would anyone deny that the idea of a university degree in veterinary education was uplifting. He was pleased to hear Dr. Wooldridge say that the report was open to modification in some of its details, for it made discussion and criticism all the more important.

Mr. Tipper observed that he had not had the opportunity of reading the report, but he was pleased to hear Dr. Wooldridge say that the student must have practical instruction, in addition to his university training. At the same

time he disliked the idea of any but members of the profession serving on the Council of the Royal College.

Mr. DOWNHAM said he was horrified to hear some of the criticism of the report. A few years ago the profession had the opportunity of having a veterinary school at Cambridge, but a leading member of the profession was against that proposal and it was turned down. That set back the clock in the veterinary profession many years. This report offered a further means of uplifting the profession, and he thought it would be folly to neglect it. The value of a veterinary degree was enormous, and it would be a good thing to have at the universities a complete course and complete veterinary degrees. Medical degrees were given in that way and the degree standard was higher than the diploma standard. He advised the profession to grasp this report with both hands, while acknowledging that there were one or two points open to adjustment.

Mr. STEELE-BODGER stated that he could endorse what Dr. Wooldridge had said about the Loveday Committee. No committee, however constituted, could have given greater consideration or shown more interest and he was astounded to see what a grasp they had of the educational requirements of the veterinary profession. With regard to the idea of university representatives swaying the Council of the R.C.V.S., he thought it was just a "red rag." They could sit on the education committee, but it was hardly likely that they would sit on committees dealing, say, with registration or discipline. Speaking as a practitioner, he thought they had much to thank the committee for in the recommendations it had made. There was no doubt in his mind that those in general practice had suffered because at the colleges animal husbandry and preventative medicine had been neglected, due to the lack of facilities. If this report would do anything to advance the cause of clinical instruction for veterinary students, they ought to support it.

Mr. Steele-Bodger concluded by moving the following resolution: "That this meeting of the Midland Counties Veterinary Medical Association held on December 16th, 1938, wishes to place on record its general approval of the salient recommendations of the Loveday report. These recommendations are considered to be in the best interests of all sections of the profession, and should do much to ensure and secure its continued advancement."

Mr. CROSFIELD briefly seconded.

The PRESIDENT said he had not intended taking much part in this discussion, but speaking as a private member, and not in his official capacity, he had been brought to his feet by the last sentence in Mr. Steele-Bodger's resolution.

"I am," said the President, "one of the unfortunate minority that has criticised the Loveday report, and I had hoped that no resolution such as is now proposed would have been brought forward. I think such a resolution would be better deferred. It is my considered opinion that the majority of the veterinary profession has so far given very little consideration to the Loveday report in detail. If you knew how few people had taken the trouble to get a copy of the report, you would be amazed at the lack of interest. I think there has been a tendency to force opinion on the rank-and-file of the profession before they have had the opportunity of hearing both sides. Reference has been made to the Council of the Royal College. Well, I happen to be a member of that body, and I think that until its views on this subject have been considered in detail, any attempt to rush things is unfortunate. You may think it curious that I take this attitude, because I see a lot in the Loveday report with which I am in entire agreement, but there are also things with which I do not agree. I would like to state the minority view before you see how the scales are weighted against me, for it is a good thing to hear both sides. Dr. Wooldridge referred to the desire of the committee to retain the one-portal system, of which we in Birmingham have always been very jealous, and it seems to me that here a second door is being slightly opened. First, there is the question of outsiders or laymen being put on the Council of the Royal College, and my contention is that none but members of the profession should be so honoured. I cannot see anyone but a lawyer being elected on the governing body of a legal profession, or the General Medical Council admitting any but doctors to membership. And then comes the question of these degrees. I am unable to agree with the granting of a veterinary degree at the end of a three years' university course. It might be different if the diploma of the Royal College went with it, but in my opinion there is a definite danger of the recipient of the degree not going on beyond the three years and setting up in practice without the diploma. You will be told that that is ridiculous, but it is not. I am old enough to remember the well-educated unqualified practitioner. He has temporarily disappeared, but there is no reason why he should not return armed with his veterinary degree from a university, and he would be difficult to control. I am strongly opposed to any other body but the R.C.V.S. having the power to grant the right to practice."

The President went on to say that he regretted the use of the term "inferiority complex" in any reference to the veterinary profession. It was unfortunate and it was not true. As for any defects in the education offered by the veterinary schools, that was because veterinary

education had too long been starved by want of capital. That sort of criticism was easy and he objected also to the reflection which the report seemed to cast on the examiners. From what he had seen of the examiners himself, he questioned whether a better or more proficient type was to be found anywhere.

"I think," added the President, "that instead of passing this resolution, this is the time for discussion and maturer thought. When this report has been considered and fully discussed up and down the country, and when the "National" and the Royal College have been asked for their views, then is the time for the rank-and-file to make their pleasure known. I regard the whole matter as *sub judice*, and thus I am not in favour of forwarding such a resolution as this at the present moment."

Mr. Steele-Bodger said that, with all respect, he must press his resolution, as the "National," before deciding anything, was anxious to know the views of the Divisions.

Mr. Green, in supporting the President, said he feared the whole thing was being carried forward by a publicity campaign. There had been very little criticism so far. Unfortunately, the veterinary profession was too easily led. He advised the meeting to think carefully before passing the resolution, which seemed to be a little premature.

Mr. Gunning enquired if there was any urgency in the matter.

The President, in answer to this and to further comments, said there was no urgency in the matter, and he would like to have the opinion of the schools, which so far had not been heard.

Mr. Barker said it would appear that the Government, in setting up a Committee to inquire into veterinary education, evidently had some doubt about the efficiency of the present system, and they asked for guidance as to the future training of veterinary students. "I think," he continued, "that we ought to be prepared to reconcile the President's view with the view of Mr. Steele-Bodger as expressed in his resolution. It will be rather unfortunate if, after this afternoon's debate, we cannot pass a resolution of this kind unanimously. I am wholeheartedly in favour of the report, and my only complaint would be that the committee did not adopt the recommendations which I offered when giving evidence. There is much that is good in the committee's report, and I should be exceedingly sorry if the Royal College of Veterinary Surgeons succeeded in scuttling it. I disagree with the suggestion that we are not in a position to discuss the report and to pass this resolution, which would give a lead to those who have not read it. If we wait there will still be many who do not read the report, and the same apathy obtains in other professions, but if you can get an opinion you should be prepared to accept it, even if it goes against the Chair. It is my belief that it would be a very retrograde step to reject the idea of a university degree, even if it had to be held in abeyance till a man gets his diploma from the College. As to the setting up of clinics, there can surely be nothing but support from the profession for this. There is no country in the world so badly off in this respect as ours, whether in relation to bovine, ovine or even porcine diseases. It would be difficult, also, to find capable teachers who were also experienced clinicians. As has been already said, some adjustment may have to be made when details come to be settled, but I see no reason why the different points of view we have heard this afternoon should not be reconciled. If this can be brought about, a great triumph for the veterinary profession should be gained by this Loveday report."

Mr. Aston observed that he wanted to know what was at the back of the mind of the Royal College when it passed the resolution they had seen in the *Record*, and he was grateful to the President for having given the answer that afternoon. He was all in favour of the university degree, provided that it did not endanger the one-portal system. As to representatives of the universities sitting on the Council of the Royal College, he could not see that there was anything to fear, as they would be so greatly outnumbered by members of the profession.

The Hon. Secretary said that on the notice convening that meeting, it was stated that any member desiring a copy of the Loveday report could have one free on application to him. Only two members had taken advantage of the offer.

He felt that this report was being rammed down their throats by the *Record*. He agreed with the President that one result of the degree as proposed might be that a recipient with some practical experience might start practising on the strength of it without troubling to finish his diploma course. As a country practitioner, and the greater part of the students to be trained would eventually become either country practitioners or State servants, he could not see that a degree in purely academic subjects would be of much use to them in after life, unless it was carried further to an advanced course in preventative medicine and wider clinical training. To prevent lengthening the course the examination could be held if necessary on the day after the diploma final. He agreed with the proposed alterations in the curriculum, and instanced that it was nearly all horse anatomy which was taught at the present time, and the anatomy of the cow and other animals had to be learned outside college. Clinical centres were of the highest importance, and we had plenty

of men in this country capable of giving sound, clinical instruction, but they were to be found in general practice, not in the schools. The schools would have to pay higher salaries than those recommended in the report to induce the right men to come out of practice to take up such work. Mr. Forsyth added: "I am not going to support any resolution to-day, because I think the time is hardly ripe for it. The report needs to be much more widely discussed and in greater detail than it has been, before the opinion of the profession as a whole is invited."

Dr. Wooldridge said it seemed impossible at the moment to secure unanimity on the report, for which he was very sorry. The Loveday Committee, however, realised that variations in detail would be called for, and for this reason it had proposed that the various bodies concerned should get together in order to discuss detail, but, unfortunately, so far no signs of such collaborative action seemed likely. Provided the R.C.V.S. worked the new scheme properly, it would be agreed that the recommendations made the one-portal system absolutely safe.

Mr. DeVine hoped the meeting would come to a unanimous conclusion. Everyone was in favour of most of the report. Even the President and Mr. Forsyth and Mr. Aston were in favour of the recommendations as a whole, and there was the safeguard against university degrees being improperly used of withholding them until the Royal College was prepared to grant the diploma also. He thought such a reservation might meet every objection. The report had to be discussed by the "National," and if no decision was reached that afternoon the Midland Division could not be said to be helping the parent body. He would like to see the Midland give the other Divisions a lead.

Mr. Scott thought the resolution was sufficiently wide to allow for any difference of opinion on matters of detail.

Mr. Steele-Bodger said he would like to add a word by way of protest against the statement that the report was being "rammed down their throats" by the *Record*. It was before the Editorial Committee last July, and every member had a hand in framing the editorials, which were carefully considered, paragraph by paragraph and line by line.

Mr. Tipper asked, as there did not appear to be any urgency, why not adjourn the matter and try to secure unanimity later on?

Mr. Downham said they must all share the point of view that no one should be granted a veterinary degree by any university until he had completed the full diploma course. That being so, there seemed very little in the report upon which agreement was not possible, especially as they had the promise of reasonable adjustment in respect of details.

Mr. Aston then formally moved that the discussion be adjourned until the next meeting, and this was seconded in two or three places.

Mr. Steele-Bodger said he must press for his resolution to be put to the vote.

The President first put to the meeting the amendment, which was defeated by one vote, and this was followed by the resolution, nine members voting for and eight against. Several members abstained from voting. The President, in declaring the resolution carried, thanked everyone for the interest they had taken in the discussion.

The meeting then concluded and the members had tea together before they separated.

A. A. Forsyth, *Hon. Secretary.*

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Yorkshire Veterinary Medical Society*

ANNUAL MEETING AT LEEDS

Mr. W. R. McKinna's Presidential Address

The Annual General Meeting of the Yorkshire Veterinary Medical Society was held in the Wholesale Meat Market, Leeds, on Friday, January 27th, 1939.

The President, Mr. W. R. McKinna, occupied the Chair and the following members were present: Messrs. J. O. Powley, J. W. Procter, A. H. Watson, G. F. Barber, W. A. Campbell, T. C. Hall, W. Andrew, G. V. Tyerman, E. F. Hardwick, W. T. MacGregor and F. C. Scott. The Society were pleased to welcome the following visitors: Miss C. A. Woods (Menstone), Mr. T. F. Stokes (Wakefield) and Dr. D. M. Mackenzie (Northallerton).

Apologies for absence were received from Messrs. J. A. Dixon, A. J. Adams, G. S. Donaldson, H. McEnhill, J. M. McKellar and D. V. Sinclair.

In opening the proceedings, the President made mention of the assistance rendered to the Society by Colonel J. A. Dixon, in obtaining the use of the room at the Meat Market for this meeting and on his proposal, the Secretary was asked to convey the members' thanks to Colonel Dixon.

The minutes of the last quarterly meeting, having been published in the *Veterinary Record*, were taken as read and adopted.

Correspondence.—(1) From the British Cod Liver Oil Products (Hull) Ltd., inviting the Society to hold their summer meeting at their refinery at Marfleet, Hull. This matter was referred to the Council for favourable consideration.

*Received for publication February 9th, 1939.

(2) From the General Secretary of the N.V.M.A., informing the Society that the following resolution had been before the Council of the N.V.M.A. at their meeting on October 4th, 1938: "That the Society of Veterinary Practitioners recommend to the Council of the N.V.M.A. that Divisions of the 'National' be requested to arrange demonstrations of *post-mortem* and laboratory technique within their area." The Council of the N.V.M.A. had agreed that such demonstrations were desirable and expressed the hope that the Division would give the matter every consideration.

In the discussion which followed, it was pointed out that demonstrations of this nature had already been given in this Division with much success and on the proposal of Mr. J. W. Procter, the Secretary was instructed to reply to this effect.

(3) From the Secretary of the N.V.M.A. enclosing a copy of a letter of protest which had been sent to the B.B.C. regarding certain talks which were being broadcast in the North Regional Programme entitled "Faithful Friends —Conversations about Pets." It would appear that in these talks, reference had been made to the disturbances of health of dogs and that one of the speakers had given prescriptions of remedies recommended for treatment. The N.V.M.A. desired the Yorkshire Division to write, in support of their letter, to the North Regional Offices registering a similar protest.

Considerable discussion ensued in which several of those present who had heard the talks described the statements which were made and on the proposition of Mr. J. W. Procter, it was wholeheartedly agreed that the letter of protest should be sent. Instructions were also given to write to the Secretary of the N.V.M.A. asking the latter body to explore the possibilities of making arrangements with the B.B.C. for talks of this nature to be given by qualified persons.

(4) From Mr. J. F. D. Tutt, F.R.C.V.S., of Winchester, stating that he hoped to obtain the release of films made in Germany showing the latest methods of sterility treatment in mares and cows and Abelein's method of dealing with Trichomonas infection, and enquiring if the Division would like a demonstration from the firm responsible. On the proposition of the President, this letter was referred to the Council.

Nomination and Election of New Members.—Mr. E. Varley (Beverley) and Mr. H. McEnhill (Ripon) were elected members and the following were nominated for election: Miss C. A. Woods (Menstone) and Mr. T. F. Stokes (Wakefield).

Gratuitous Disbursements.—It was resolved that the usual donations made by the Society at this meeting should be continued, namely, three guineas each to the National Veterinary Benevolent and Mutual Defence Society and the Victoria Veterinary Benevolent Fund, and one guinea to the National Horse Association. In response to an appeal from the Adrian Jones Statue Appeal Fund, it was also agreed to forward the sum of two guineas as a donation for this worthy object.

At this stage of the proceedings, the President rose to remind the members of the willing services given and kindness shown by the staff of the Leeds University in arranging poultry demonstrations at Askham Bryan for the benefit of this Society. He informed the meeting that he had approached Professor MacGregor to ascertain if there was any tangible form in which the Society could show its appreciation and he had now much pleasure in suggesting that a donation be made to the Leeds University Students Prize Fund. On the proposition of Mr. J. O. Powley, seconded by Mr. J. W. Procter, a donation of five guineas for this purpose was enthusiastically approved.

President's Address

The President then delivered his address from the Chair, as follows:—

I have again the honour of appearing before you to conform with the Society's ruling of a Presidential address at this January meeting. On the previous occasion I confessed to my inexperience and doubts that I could uphold that high standard set by Past-Presidents. In wishing me to hold the reins of office for another year, it would appear that I have not failed entirely but that my apprenticeship can only be completed by a further period of service before I can attain that standard demanded by the Yorkshire Society. I am comforted somewhat in the knowledge that previous Presidents have served similar terms of apprenticeship, and that this custom is merely another example of Yorkshire thoroughness. Nevertheless, I esteem your confidence greatly and can only reiterate my desire to give you of my best.

The year 1938 must rank as one of the most important in our profession's history by the creation of the State Veterinary Service. This change and reorganisation of our ranks and work has necessarily caused feelings of uncertainty and unrest, and our own Society has not been immune from this atmosphere. In the early part of the year when we were on the threshold of a new era in the Veterinary Profession, with a scheme touching the interests of us all, many of us were anxious as to the future. The prolonged and difficult negotiations will be fresh in your minds. Finally, after prolonged labour, the State Veterinary Service was officially born on April 1st. Like many infants, the first weeks and months of its existence were restless, creating some atmosphere of disquiet. Now its ways are better understood and its nurses more adept, it would appear to be thriving and shows

every probability of growing into a lusty, healthy infant.

In Yorkshire, at any rate, I think we will all agree that the new Animal Health Division has now developed its organisation in such a way that effective control of animal diseases is assured if we all give our best services enthusiastically to this end. We have, however, lost that more intimate touch with public health work amongst local authorities which had been carefully fostered during the past years. Loss of contact with Medical Officers of Health and influential citizens interested in public health work is to my mind very regrettable and tends to shut off the veterinary profession into a water-tight compartment from which it had been slowly emerging. One can only hope that this loss of contact is of a temporary nature.

I do not propose to weary you with a lengthy address and wish only to emphasise a few points of topical interest. To-day, the broad view of preventative medicine holds the field, and in addition to the well-known problems of cattle diseases it would appear probable that a new sphere of work will be opened up when the subject of poultry disease and mortality is attacked in earnest by the Ministry of Agriculture. The report of the Poultry Technical Committee of Great Britain indicates the urgency of the problems affecting the poultry industry. In their own words, "drastic measures to cope with the present position are imperative and must be taken at once." The Yorkshire Society has not neglected its duties to its members in offering facilities for renewing their knowledge of fowl diseases and making them acquainted with the modern methods of poultry husbandry.

Another matter of major importance is the publication of the Report of the Committee on Veterinary Education in Great Britain. This Committee, under the Chairmanship of Thomas Loveday, was charged with "A review of the facilities available for veterinary education in Great Britain in relation to the probable future demand for qualified veterinary surgeons. . . ." A graceful acknowledgement of our usefulness to the Nation's welfare prefaces the report and is followed by a further ventilation of the profession's educational starvation by the State. To other countries, this neglect must appear incomprehensible in a land so rich in livestock of the first quality and amongst a people so ingrained in the love and nuture of animals. Customs and institutions do not change rapidly in this Island of ours, but it is to be hoped that this fresh emphasis on the profession's needs will bear fruit in the near future.

Our professional journals have discussed at great length this most interesting report and its many details and far-reaching recommendations. If adopted, the effects on our teaching colleges and graduates will be enormous and set in motion new ideals to be striven for. Those with the requisite knowledge will be competent to deal with the suggested alterations in time-tables and curricula and indicate amendments where such appear to be needed. I, myself, enthusiastically welcome the suggestion of close affiliation of the veterinary schools with the universities, and am confident that the association of the veterinary graduate with students of the other sciences will yield him immeasurable good, not only in his studies but in his contacts in after life. In my own memory, this loss of touch with university life in London has always been a great regret. The committee has shown courage and vision in advocating the establishment of a Field Station attached to each school. This will provide the students with the much-needed association with animal husbandry and the clinical study of farm livestock so conspicuous by its absence to-day. It needs no words of mine to emphasise the tremendous importance of the suggested innovation and the unbounded good to the student that will accrue as a result.

That we should retain our "One portal system" of entry into the profession is upheld; it is a heritage that we should not lightly surrender.

There are some recommendations of the Committee which are obviously difficult of acceptance, but the report on the whole breathes a spirit of encouragement and renewed inspiration.

The last Parliamentary Session disclosed the Government's intended long term policy for agriculture in the Milk Bill. Following the strenuous opposition to this policy, the withdrawal of the Bill took place and its successor has not yet been laid before Parliament. It is, however, interesting to know the trend of thought of the Minister of Agriculture in connection with milk and it should be of considerable interest to us professionally.

One of the most contentious parts of the old Bill was that of pasteurisation of the large bulk of the country's milk supply. Discussed from an academic and scientific standpoint there can be very little real argument against a properly controlled pasturisation process to render milk innocuous to the consumer. A glance at statistics over past years shows a high percentage of tubercle-infected milk reaching the large cities. The tragic figures of the annual mortality of children from bovine sources of infection make a damning indictment against the consumption of raw milk, while milk-borne epidemics in urban areas can be enumerated sufficiently frequently to enable us to realise the potential dangers in this direction.

To-day I would suggest to you that there are

equally forcible arguments against this pasteurisation policy and that other issues must be taken into consideration. We are very familiar in the North with the producer-retailer of milk, usually a man who farms a small acreage with a corresponding amount of livestock and crop produce. The number of producer-retailers is given as over 60,000 in England and Wales. What would be the effects of a compulsory pasteurisation policy on this class of farmer? I do not need to emphasise to anyone here the struggle for a livelihood that they have had in the industrial North where production costs are higher than in other parts of the country. That they retail their own produce is, in the main, the *raison d'être* of their business, and should they be compelled to pool their milk at a central depot to collect in return a number of bottles of pasteurised milk obtained from innumerable sources, the relation of producer to customer is at once altered. This factor combined with the proposal of effecting economies in distribution would at once play into the hands of the large dairy firms and a favoured few. As I see it, that way lies the extinction in a short period of time of a vast majority of retail-producers. These men in the sum total of their farming productivity constitute no small part of the country's agricultural resources. Can a Government to-day afford to ignore the grave possibility of throwing into enforced idleness thousands of small farmers and their dependents, and losing their contribution of the rearing of stock and cultivation of land?

We live in times of international uncertainty, in days when the rumble of the drums of war is not hard to hear. We may be faced with the necessity of deriving all possible support from our own soil, and I submit that a wide view such as this must over-ride a public health ideal at the present time.

From this atmosphere of peaceful academic discussion may I be forgiven if I ask you to retrace your thoughts to the dark days of last September when we found ourselves almost plunged into the abyss of war? None of us can have been immune from the shock of seeing this almost certain catastrophe about to take place. We cannot easily forget the dramatic reprieve at the eleventh hour nor one's thankfulness that the incredible horrors of modern warfare had been spared us. With the continued distrust of European nations and the urgent piling up of armaments, who can say for how long this peace will be maintained? He would be a fool who disregarded the angry clouds in the sky and did not make some preparations for the storm.

What preparations have we made as a profession, and how we can best serve our country if the need should arise? We are all aware that the mechanisation of the Army has reduced horse transport to such a low level that our services in our professional capacities are not likely to be required as in the last war. This is, in my judgment, a matter for serious thought by the individual as well as by our leaders.

The National Veterinary Medical Association has made the first steps of enquiry as to how the profession may best be organised and adapted to modern conditions of warfare, and now is the time for "authority" to say in what capacity we can serve our country in a time of emergency. The days of the September crisis found us devoid of directions or ideas. Our voice should have been heard in the land in respect of the protection of animals against gas warfare and high explosives. It was left to an unprofessional animal welfare organisation to offer to the public one practical method of protecting the dog or cat against gas by devising a gas-proof chamber. Many of us were asked for advice and we could give but little comfort.

Now there has been allowed us a breathing space and time to collect our thoughts, I feel that one should be able to offer some suggestions of value in regard to animals under our care. In regard to kennels and stables with only doors and windows to protect, a little foresight should enable many of these to be made gas-proof speedily and at a small cost. In this way, a minimum number of urgent cases could be hospitalised. The larger farm buildings offer more difficulties, but one can quietly advise the farmer of the possibilities of protection. High explosives are considered to be as great a menace as gas in modern aerial warfare, and the erection of earth barriers of 12 to 18 inches thick and 5 to 6 feet high around buildings would be feasible on many farms and give a high degree of protection against splinters and blast.

These are suggestions I throw out as to what we might do. Undoubtedly we need a thorough ventilation of a matter vitally urgent and I do press for continued publicity by the Committee of the N.V.M.A. who are investigating these problems.

From wars and rumours of wars may I bring your thoughts back once more to the paths of peace. We have entered a new era of professional vision and outlook. Prevention rather than cure is to be the watchword. We are working towards the day when tuberculosis will be a relic of bad husbandry, when science will place in our hands weapons to nullify such scourges of disease as hinder our progress. Then we shall have done our part to ensure the prosperity of agriculture and with it that of the nations and nation's health.

Ours is a great heritage and a great opportunity to make more secure than ever "England's green and pleasant land."

The President's address was greatly appreciated by all present and on the motion of Mr. F. C. Scott, seconded by Mr. A. H. Watson—

who both spoke to its excellence—a hearty vote of thanks was accorded to him.

Demonstrations.—Mr. H. R. Hewetson, M.R.C.V.S., of Southport, then gave demonstrations on (*a*) the use of the oesophagoscope and bronchoscope; (*b*) canine dentristry (difficult extractions). These excellent and practical demonstrations so ably performed by Mr. Hewetson were keenly followed by all present and an opportunity was given to those who so desired, to insert the instrument and examine the oesophagus. The ease with which the instrument is inserted in the oesophagus as compared with the trachea was commented upon by several members.

Later the patient was destroyed and a series of most difficult dental extractions was carried out by Mr. Hewetson.

On the call of the President, the thanks of the members were conveyed to Mr. Hewetson for his most instructive and informative afternoon's work.

The meeting then closed.

A. J. Adams, *Hon. Secretary.*

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North Midland V.M.A.*

MEETING AT SHEFFIELD

A General Meeting of the Division was held at the King's Head Hotel, Change Alley, Sheffield, on Tuesday, November 29th, 1938, at 4 p.m.

Mr. E. Marrison (President) occupied the Chair.

An apology for absence was received from Mr. W. Collinson.

A letter was read from the General Secretary, N.V.M.A., relating to poultry diseases, and it was decided to approach the Derbyshire Division as to whether it would be possible to join them in their course of lectures.

Address by the President.—Mr. Marrison now gave a brief Presidential address, which was as follows:—

It is customary for the newly elected president of a society to make some reference to the present-day politics of the profession but, this being a state of emergency owing to the enforced resignation of Mr. Canning, I shall content myself by thanking you for the honour you have done me in electing me your President for the second time since 1935.

You will no doubt remember that on that occasion I very strongly stressed that the veterinary practitioner would under the new regime slowly but surely be deprived of such work as was necessary for his existence.

I notice in the current issue of the *Veterinary Record* that, in reply to the toast of the Society of Medical Officers of Health, proposed by the President of the Royal College of Physicians, the responder uttered the following warning: "Unless they were very careful to see that the general practitioner was utilised more and more in public health work he would atrophy, and it would be a bad day for the general public if that were allowed to happen."

If it is necessary to issue such a warning on behalf of the sister profession with its powerful Medical Council, then I contend that unless the veterinary practitioner is utilised more and more in similar circumstances not only will it be a bad day for the general public but, to put it mildly, a disastrous day for the agriculturist.

Now gentlemen, that is briefly my address, and as Mr. Hudson has so generously expressed his willingness to give us a paper on "Hoose in Cattle," I shall have pleasure in calling upon him to deliver his address on that important subject and afterwards, if time permits, I hope to introduce a few subjects which I am of opinion will be sufficiently interesting to provide a good discussion.

Paper.—Mr. R. Hudson gave an informative contribution on the subject "Parasitic Bronchitis, Husk or Hoose," prefacing his paper with the following observations:—

"Owing to various happenings we have not had a meeting for a long time and, discussing the matter with friend Fletcher, he asked me to give a paper. I consented, because I hope still to keep our Society alive.

"A visitor to our Congress has remarked on the number of veterinary societies in England and their educational value. With the latter remark I think you will agree. I have never attended a meeting without learning something, so I hope we may carry on for the benefit of us all.

"There is another point I would like to stress and that is that editors of veterinary publications are often in need of clinical reports, and I would ask you to try and contribute something: I know you can. I know that interesting cases are always happening and the *Record* and the *Journal* would much appreciate an account of them. We all look forward to their appearance but do we ever *think* what an immense task their production must be? What must the editors think of us, knowing what an abundance of material there is, if we would only send it them?"

The discussion was opened by Mr. Marrison and maintained by Messrs. Scott and Fletcher, amongst others.

Mr. Marrison then made a short speech opening up four subjects for discussion, *i.e.*, the use of the naso-pharyngeal tube, castration by

*Received for publication December 13th, 1938.

CONFERENCE ON "ROARING"

We print below for the interest of our readers an extract from *The Sporting Life*, issue dated January 17th, 1939, headed "Roaring—an acquired complaint. Hereditary only in an age of miracles," by Adair Dighton, F.R.C.S., together with an expression of views from others interested in this subject. Also a report on the joint committee meeting (at which these views were submitted), held in the Royal Agricultural Hall, Islington, under the auspices of the National Horse Association, on Thursday, February 23rd, 1939, to discuss various statements which had appeared in the Press recently stating that roaring was not a hereditary disease.

"Roaring an Acquired Complaint. Hereditary Only in an Age of Miracles"

(*Sporting Life*, January 17th, 1939)

Many readers do not realise that "The Special Commissioner" (Adair Dighton) was, until he joined our staff owing to tuberculosis contracted on war service, one of the leading ear, nose, and throat surgeons in England. At an early age he read a paper before the International Otological Congress at Boston, U.S.A.

From his knowledge of the throat in the human, he is entitled to write on that of the horse, and we publish his authoritative article in the hope that it will lead to correspondence.

By Adair Dighton, F.R.C.S.

From the report of the Council Meeting of the National Horse Association that appeared in *The Sporting Life*, I see that there has been some correspondence in contemporaries anent the subject of roaring. Though I have not seen these articles, I understand that my name has been mentioned in them. Under these circumstances, it may be as well, and of interest, to explain the whole position from a rational and common-sense viewpoint.

Properly to understand this, it is necessary to realise that every multicellular organism, whether human, equine, or of any other variety of life, consists essentially of two groups of cells that can be divided into the somatic or body cells, and the germinal or productive cells. The germinal or productive cells are continuous from generation to generation, and contain in them certain factors that go on from father to son or daughter, or from mother to daughter and son. The continuity of greyness in the racehorse is the best example known of this; through 19 direct greys, The Tetrarch carried his colour, or the lack of it, in a pedigree containing the names of 524,288 ancestors. The somatic or body cells are different, inasmuch as they merely act as the protective and temporary covering cells for the germinal cells that they protect or cover.

So it comes about that while an attribute or a deficiency of the germinal cells continues from generation to generation, an attribute, disease or deficiency of the body cells begins and ends with the lifetime of the germinal cell that they house. A hare-lip, due to a lack of developmental stimulus in the germinal cells, is hereditable; an acquired cut-lip, of accidental origin to the somatic or body cells, is not.

Apply this to roaring. This disease in the horse is analogous to what is known as abducens paralysis in the human being. The cause is a pressure on the left recurrent laryngeal nerve, which, for some reason or another, pursues a tortuous course from its origin, to wind round the aorta and then run up the neck to its eventual ending in the laryngeal muscles.

A dilatation of the aorta—aneurysm—may affect it; pressure from a tuberculous lung may irritate it; enlarged glands in the neck may hinder its action, and the inhalation of noxious gases, such as emanate from the damp excreta in stables, may paralyse its endings.

These causes and their ultimate effect—roaring—are acquired diseases or affections of the somatic or body cells, and, as such, die with the germinal cell that they have failed to protect.

To believe it is hereditable is to believe a miracle; a man who has lost his eye in a motor-car smash is no more likely to sire one-eyed children than the man who escaped the accident; a man or woman with an artificial leg has yet to be discovered who has had a child equipped with the same manufactured aid.

Miracles are out of date; common-sense, based on a sound foundation, proves that roaring, like cancer and many other acquired diseases of the somatic cells, cannot be transformed into an inborn disease of the germinal cells, and so is not hereditable.

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Mr. George Findlater, *President, the Clydesdale Horse Society.*—It is my own opinion and, incidentally that of the Council of the Clydesdale

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crushing of the cord, mastitis, and the overstocking of udders.

Discussion on these subjects followed.

Before the meeting closed Mr. Fletcher proposed and Mr. Hirtes seconded that Messrs. D. Caldwell and D. L. Thomson be nominated for membership.

The date of the next meeting was fixed for February 28th.

The meeting closed with a vote of thanks to Mr. Hudson for his paper.

R. E. Hirtes, *Hon. Secretary.*

Horse Society, that roaring in horses is hereditary and those so affected should not be used for breeding purposes. It is generally caused by strangling cold and some horses are more prone than others to take cold and are very often left with roaring.

Earl of Rosebery, *President, Thoroughbred Breeders Association.*—Naturally I have not been able to consult with other members of the Council, but from my study of pedigrees of horses, I agree with the opinion of the National Veterinary Medical Association, that roaring is a hereditary disease although I think also that it can be acquired, for instance, after influenza or from being badly looked after.

Major H. Faudel-Phillips, *President, National Pony Society.*—I hardly like to express an opinion on roaring, but my belief is that the tendency is hereditary, not the actual roaring.

Mr. C. G. Argles, *President, Hunters' Improvement Society.*—I should hesitate for a long time to strike out roaring from the list of hereditary diseases. It is an outcome of whistling which is caused by the paralysis of parts of the respiratory organs. This arises very often from the weakness of the sire or dam or both; sometimes also it is caused by faulty conformation of the animal itself. On the other hand, suppose an animal has lived or worked for seven or eight years and kept sound, then it contracts a severe cold or influenza which leaves its mark in the form of whistling, I should not hesitate to breed from such an animal *if* and only if, I know its history. With this single exception I would not breed from it on any account.

Dr. Fred Bullock, *Secretary, Royal College of Veterinary Surgeons.*—I beg to inform you that in 1888 this College was asked to supply information as to what were considered to be the hereditary diseases of horses, to the Royal Commission on Horse Breeding. Circulars were issued to every veterinary surgeon and the replies were tabulated. As a result it was found that there was a consensus of opinion that roaring must be classified as a hereditary unsoundness. There has been no similar enquiry since.

The rules as to the licensing of stallions in France also provide that a stallion suffering from chronic roaring is not eligible for a licence. This is settled by the Law of August 14th, 1885, supplemented by the Law of March 8th, 1923. Stallions are not bought by the State Stud Administration, if they suffer from chronic roaring, and if a stallion belonging to the stud becomes a roarer he is either castrated or destroyed.

Mr. Brennan DeVine, *President, National Veterinary Medical Association.*—I hold the opinion that whistling and roaring in horses is a hereditary disease, which is handed on principally through the male line. For this reason I do not consider it is wise to breed from sires which are affected with the condition known as roaring.

In the Horse Breeding Acts roaring is laid down as one of the hereditary diseases, and acting on this recognised authority I maintain that so far as our present knowledge is concerned, all veterinary surgeons should consider this disease hereditary until it is proved to the contrary.

Mr. J. B. Robertson, *Lancaster.*—I have noticed in the Press recently certain irresponsible and illogical expressions of opinion that roaring in horses is not hereditary. Not one of the writers observes the first principle in the grammar of genetics, namely, whether or not the incidence of roarers and whistlers is larger in the offspring and descendants of roarers and whistlers than in the offspring of horses and mares not affected with the lesion, or in the case of horses in general.

After collecting data for over 60 years in the case of the thoroughbred, and examining hundreds of horses and mares from the hereditary aspect in the thoroughbreds, and also very many horses for the Ministry of Agriculture, under the Horse Breeding Act of 1919, the evidence at my command is overwhelming that paralytic roaring and whistling are due to hereditable factors.

The inherited defect lies in the two brain cells which function the abduction of the larynx, and not primarily in the respective axons and fibres of the recurrent nerves, or in the abductor muscles of the larynx. The gene carrying the defect behaves as an irregular recessive. Thus two parents sound in wind (each inheriting a single gene carrying the roaring defect) may give rise to one or more offspring which in due course become affected. Roaring parents must carry one gene (roaring), and are more likely to carry two. Not all their offspring are affected because the gene during the maturation of the germ cells does not by any means enter every chromosome, and may be absent from the 30 haploid (including sex determining chromosomes) which enter from each parent into the formation of the first stem cell of the embryo.

The central fact, however, remains that roarers and whistlers beget in the long run a far larger incidence of affected offspring than do sound parents. There is no better case, by way of illustration, than Lily Agnes, her son Ormonde, her grandson Goldfinch, and her great granddaughter Chelandry.

I doubt if those who claim that roaring is purely an acquired defect know anything about the ancestry and history of roaring thoroughbreds. I have not noticed that they advance any statistical data in support of their pathological and Weismann theories.

THE CONFERENCE

A Joint Committee Meeting was held at the Royal Agricultural Hall, Islington, under the auspices of the National Horse Association, on Thursday, February 23rd, 1939, to discuss various statements which had appeared in the Press recently stating that roaring was not a hereditary disease.

The following were present: Mr. T. Eaton-Jones, F.R.C.V.S. (Chairman), Mr. J. Willett, M.R.C.V.S., Mr. W. S. King, M.R.C.V.S., Mr. W. Perryman, M.R.C.V.S., Mr. J. W. McIntosh, M.R.C.V.S., Mr. H. E. Bywater, M.R.C.V.S., Mr. R. C. Irving, F.R.C.V.S., Mr. F. H. Unwin, Mr. W. J. Cumber (President, Shire Horse Society), Mr. J. Morris Belcher (immediate Past-President, Shire Horse Society) and Mr. R. A. Brown (Secretary, National Horse Association).

The CHAIRMAN commenced the proceedings by referring to correspondence which had appeared in the Press recently stating that roaring and its kindred complaints were not transferable to offspring. Opinions had been solicited from various well-known gentlemen, and a summary of these was read out to the Committee. The subject was then thrown open for discussion.

Mr. R. C. IRVING said that "Eclipse" was described as thick-winded, etc., and was in point of fact a roarer, although that term was not used at the time. "Eclipse" left the best stock of any thoroughbred, but a great many of these were roarers and their names appear in the pedigrees of many other roarers. He did not think that roaring was hereditary in the strict sense of the word, for he considered that conformation had the greatest bearing on roaring. He cited many instances of roarers which were outsize horses, whereas other horses of the same family which were small, escaped roaring. He said that roarers had contributed tremendously to the improvement of the breed.

Mr. W. J. CUMBER was convinced that susceptibility to roaring and shivering was hereditary, in that conformation was hereditary and the conformation of the animal had a very great influence on the development of roaring, shivering, and other complaints. He knew of two yearlings, one of which was a roarer and one a shiverer.

Mr. W. PERRYMAN said that in human beings nervous affections were liable to develop with age but the predisposition to these nervous affections was present in childhood as an hereditary tendency. Examples of similar latent nervous defects in horses were roaring, whistling and shivering, which later might develop as a result of injury.

Mr. J. W. MCINTOSH observed that he had had 50 years' experience, and one must pay great attention to experience in this matter. His experience bore out the old axiom that "like begets like." A good horse could be bred from a roarer, but his experience was that roaring was a hereditary tendency, just as much as conformation, which was of course transmitted. His experience with heavy horses indicated that one should breed sound and true for permanent results, not temporary gain. Breeding solely for young, saleable horses was not the ideal to be strived for.

Mr. W. S. KING said that roaring followed infection by a streptococcus but there was hereditary predisposition. He had horses affected with streptococcal infections. Some, bred of good stock, did not develop roaring, but those bred of roaring stock became whistlers or roarers as the result of streptococcal infection. He had statistics to show that 90 per cent. of the cases of roaring were due to paralysis of the recurrent nerve and approximately 2 per cent. to cardiac troubles. Thickening of the mucous membrane due to infection might subside but whilst the mucous membrane was thickened one would get roaring; it would disappear, however, as the mucous membrane became normal. This resulted in temporary or intermittent roaring. It was an insult to the intelligence to say roaring did not result from an inherited predisposition.

Mr. J. WILLETT said that roaring was acquired and a provisional licence might be given under the Horse Breeding Acts to a horse which was suffering from roaring, if the animal were over nine years of age. We did not know for sure if roaring was hereditary and so we should assume that it was, until the contrary was proved, if breeding were to be conducted on safe lines.

Mr. CUMBER stated that he had records of Shire horses that had had streptococcal trouble which had developed roaring, whilst others which had streptococcal infections did not develop these troubles. He was convinced that there was a hereditary tendency to the development of roaring. He was satisfied that a hereditary tendency also predisposed to tuberculosis in cattle. Breeders could give information to prove his contentions if they would only do so.

Mr. J. M. BELCHER thought that hereditary influences were to blame for roaring and similar complaints, such as shivering.

Mr. IRVING asked Mr. Cumber if he could give them any information as to the part the mare played in the transmission of these defects. Mr. CUMBER replied that it was very difficult to give an opinion about the hereditary influences of the dam, as records were not so easily traced as those of the stallion.

Mr. KING said a beta-haemolytic streptococcus was a far greater cause of the development of roaring and whistling than was the strangles streptococcus. Another important

point was the climate. He had been informed on good authority that a large number of roarers and whistlers when sent to Egypt, either lost the defect or there was a marked amelioration in the sounds produced, but that when these horses were sent to other climates the defect recurred.

Resolution.

Mr. CUMBER proposed: "That this Committee is not in favour of the elimination of roaring from the list of hereditary diseases scheduled under the Horse Breeding Act of 1918." This was seconded by Mr. J. WILLETT and passed unanimously.

IN PARLIAMENT

The following questions and answers have been recorded in the House of Commons recently:—

ANIMAL DISEASES (RESEARCH)

Mr. BARTLETT asked the Minister of Agriculture how many veterinary surgeons are employed by the Ministry on full-time research work into animal diseases; how many of these men were employed three years ago; and are the salaries and prospects such as to attract men of outstanding ability?

Sir R. DORMAN-SMITH: Twelve veterinary surgeons are at present employed by the Ministry on full-time research work into animal diseases; of these officers eight were employed three years ago. As regards the last part of the question, the salaries and prospects of officers so employed have recently been substantially improved with this particular object in view.

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FOOT-AND-MOUTH DISEASE

Mr. PEARSON asked the Minister of Agriculture whether he can state the number of cattle destroyed, and the total compensation paid, during the recent outbreaks of foot-and-mouth disease in Glamorganshire and Monmouthshire, respectively?

Sir R. DORMAN-SMITH: In the outbreaks of foot-and-mouth disease which have occurred in Glamorgan since the beginning of November last, the number of animals compulsorily slaughtered was 405 cattle, 1,252 sheep and 95 pigs, and the compensation paid amounted to £9,740 1s. The corresponding figures for Monmouthshire are 84 cattle, 233 sheep and 44 pigs slaughtered and £2,055 3s. paid in compensation.

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MILK PASTEURISATION

Mr. LEACH asked the Minister of Health whether he will receive a deputation of the opponents of compulsory pasteurisation of milk, who will be prepared to deal with the statements made by the medical representatives at the deputation he received on February 8th?

Mr. BERNAYS: If and when my right hon. Friend receives a request for such a deputation he will, of course, consider it.

Captain P. MACDONALD asked the Minister of Agriculture whether, in view of the fact that one of the principal difficulties lying in the way of expanding the consumption of liquid milk in this country is the unwillingness of the medical profession to co-operate until arrangements have been made to ensure a milk supply that is bacteriologically pure or pasteurised, he will consider the desirability of calling an early conference with representatives of the medical profession to ascertain on what basis it is possible to obtain co-operation in this matter?

Sir R. DORMAN-SMITH: My right hon. Friend the Minister of Health recently received a deputation from the British Medical Association, the Society of Medical Officers of Health and the Joint Tuberculosis Council, who laid before him their views on the necessity for pasteurisation. The Parliamentary Secretary to the Ministry of Agriculture and Fisheries was present, and I will confer with my right hon. Friend as to the prospects of useful results being achieved by such a conference as my hon. and gallant Friend suggests.

Mrs. TATE: Is my right hon. and gallant Friend aware that pasteurisation kills not only the vitamins but the hormones in milk, and will he do nothing to discourage that pernicious practice?

Captain P. MACDONALD: Is the Minister aware that the attitude of many of these local authorities and medical officers of health is influenced by the fact that they get no lead from the Ministry of Health in this matter, and will he confer with the Minister of Health in order to see that some definite lead is given and no dog-in-the-manger attitude is adopted towards the question of pasteurisation?

Sir R. DORMAN-SMITH: I realise that there is more than one opinion on this question, and I will have a consultation with my hon. and gallant Friend on the matter.

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CENTRAL SLAUGHTERHOUSES

Sir PERCY HURD asked the Minister of Agriculture what progress has been made with the scheme for central slaughterhouses in typical areas as provided for in the Livestock Industry Act?

Sir R. DORMAN-SMITH: I would refer my hon. Friend to the reply which I gave to a question on the subject asked by the hon. Member for Don Valley (Mr. T. Williams) on February 9th [reproduced in a recent issue of the *Record*—*Editor*]. I understand that the examination of the twelve proposals for the establishment of central slaughterhouses which have been submitted to the Livestock Commission is proceeding as rapidly as possible.

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EXPERIMENTAL SLAUGHTERHOUSES

Mr. WESTWOOD asked the Secretary of State for Scotland how many authorities, if any, have submitted proposals to the Livestock Commission for the setting up of an experimental central slaughterhouse as laid down in the Livestock Industry Act, 1937; and whether any selection has yet been made?

THE SECRETARY OF STATE FOR SCOTLAND (Mr. COLVILLE): I would refer to the reply given by my right hon. Friend the Minister of Agriculture and Fisheries on February 9th to a similar question by the hon. Member for the Don Valley (Mr. T. Williams), a copy of which I am sending to the hon. Member. I understand that the examination of the twelve proposals submitted is proceeding as rapidly as possible, but that no selection has yet been made by the Livestock Commission for the purposes of the three experiments.

Mr. WESTWOOD: Can we get any indication when this selection is likely to be made, in view

THE LATE MR. HENRY GRAY, M.R.C.V.S

FURTHER PERSONAL TRIBUTES

In the passing of Henry Gray the veterinary profession has lost one of its ablest members—a wonderful personality and a unique character.

Having been intimately associated with him during the last 17 years and having had the privilege of his confidence during that time, it was my good fortune to enjoy the friendship of this remarkable man.

He had an unparalleled breadth of vision and his apparently casual remarks on any subject emanated from his quick perception. His decision was the result of a series of logical conclusions: if he said he did not know then one could be quite sure no one else knew.

Henry Gray had a marvellous memory and he could quote the sayings, and give the references, of eminent people with such facility as to astound one.

His love for his profession was a real one and his work was his pleasure. His library was a source of joy to him and he might well be regarded as one of the best-read members of the profession. His knowledge of veterinary politics was unsurpassed and one can remember as far back as 1923 when he foretold the changes which would take place in State veterinary activities and with which we are all conversant to-day.

Henry Gray's contributions to veterinary literature need no enumeration but will remain as permanent marks in the advance of veterinary knowledge. His powers of observation were acute and his clinical records made many years ago are only just being recognised and confirmed as facts in the profession to-day.

Many young veterinary surgeons have Henry Gray to thank for wise counsel willingly and generously given. His opinion was honest and he meant in his heart what he said.

Henry Gray was once described as "the essence of originality." His loss is a real one and he will be sadly missed by many friends inside and outside the profession at home and abroad.

T. J. R.

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It was with a sense of personal loss that I read in your columns for February 25th of the death of Henry Gray. I am only deeply sorry that I did not learn of it sooner, for I would like to have paid my last respects to the "grand old man" of our profession.

As an assistant who became a friend, and benefited richly by contact with his vast clinical experience and those "armchair talks" mentioned in his obituary by Dr. Hare, I had personal experience of his sterling qualities. Henry Gray was the refined end-product of an age more leisurely and intellectual than our own, and by his death the veterinary profession has lost one of its greatest men.

We younger members can only mourn the snapping of one more link with a past whose traditions should inspire every graduate of veterinary medicine.

Ernest Gray.

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of the fact that the Act has been in operation for almost a year?

Mr. Colville: I understand that a selection will be made very soon.

Dogs (Passenger Trains)

Mr. Day asked the Minister of Transport whether his attention has been drawn to a regulation, recently issued by the London and North Eastern Railway Company, that passengers, notwithstanding that they are in possession of a recognised ticket for the transport of dogs, are not allowed to travel their animals by certain passenger trains, even in the guard's van; and whether he will inquire whether it is the intention of any other railway companies to introduce similar regulations?

Mr. Burgin: Although I have no jurisdiction in this matter I have communicated with the railway companies and will let the hon. Member know the result.

Mr. Day: Can the right hon. Gentleman say whether this is the first time for nearly 100 years that such a ban has been introduced on the railways?

Mr. Burgin: Not from personal knowledge, at any rate.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Mar. 8th.—Meeting of the Lancashire Division, N.V.M.A., at Manchester, 2.30 p.m.

Mar. 10th.—Annual General Meeting of the Southern Counties Division, N.V.M.A., at Salisbury, 2.30 p.m.

Mar. 10th.—Meeting of the South Wales Division, N.V.M.A., at Carmarthen, 2.30 p.m.

Mar. 11th.—Annual General Meeting of the North of England Division, N.V.M.A., at Newcastle-on-Tyne, 11 a.m.

Mar. 13th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 4 p.m.

Mar. 17th.—Meeting of the Welsh Branch, N.V.M.A., at Cardiff.

Mar. 17th.—Annual Dinner and Dance of the Yorkshire Division, N.V.M.A., at Leeds.

Mar. 30th.—Annual Dinner and Dance of the Midland Counties Division, N.V.M.A., at Birmingham.
April 1st.—Annual Fees due to R.C.V.S.
April 12th.—R.C.V.S. Committee Meetings.
April 13th.—R.C.V.S. Committee Meetings.
April 14th.—R.C.V.S. Committee and **Council** Meetings.
May 4th.—R.C.V.S. Council Election. Last day for nominations.
May 8th.—Animal Management Examination begins.
May 15th.—Rome Congress on Comparative Pathology begins.
May 18th.—R.C.V.S. Council Election Voting Papers issued.
May 25th.—R.C.V.S. Council Election Voting Papers due.
June 1st.—**Annual General Meeting, R.C.V.S.**
June 8th.—D.V.S.M. Examination begins.
June 20th.—R.C.V.S. Committee Meetings.
June 21st.—R.C.V.S. Committee Meetings.
June 21st.—**R.C.V.S. Annual Dinner.**
June 22nd.—R.C.V.S. Committee Meetings.
June 23rd.—R.C.V.S. Committee and **Council** Meetings.
July 23rd—28th.—N.V.M.A. Congress at Great Yarmouth and Gorleston-on-Sea.

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North of England V.M.A. Dinner

The North of England Veterinary Medical Association held a successful dinner at the Royal Station Hotel, Newcastle-on-Tyne, on February 23rd, 1939. This dinner arose out of a suggestion by Mr. H. B. Allan, and the Association felt that it would provide a suitable opportunity to entertain colleagues in the allied professions of agriculture, medicine and surgery. The official guests were Professor J. A. Hanley, King's College; Councillor C. B. Chartres, Northumberland; Dr. R. E. Moyes, President, B.M.A. Northern Branch; Mr. J. Lister Scott, President, B.D.A. Northern Branch; and Dr. McCracken, M.O.H., Durham. Mr. J. R. Procter, of York, was unable to be present owing to illness. A thoroughly enjoyable evening was spent. The speeches were of an interesting nature and light entertainment was provided by Mr. Harry Goodfellow and Mr. Teale. It is hoped that it will be possible to make this dinner an annual function of the North of England Division.

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PERSONAL

Mr. J. W. McIntosh's Pending Departure for Crieff.—We understand that, early in May, Mr. J. W. McIntosh, F.R.S.E., M.R.C.V.S., and family will be leaving Dollis Hill Farm, Cricklewood, for Crieff, Perthshire. For some time recently, following his retirement from the position of Veterinary Adviser to the Hay's Wharf Cartage Company some years ago, Mr. McIntosh has been contemplating a return to his native heath—he was born in the lovely neighbourhood of Pitlochry in the same county. The pending demolition of the old farm at Dollis Hill, together with the building encroachment that has gradually absorbed all the attached land, where for 23 years Mr. McIntosh has housed or run ailing animals from the great stud of up to 3,000 horses under his care, has now determined him upon the move.

Welcome as his decision will be to his colleagues and friends across the Border, Mr. McIntosh's departure, and that of Mrs. McIntosh and their daughter, Mrs. Nickinson, will be greatly regretted by the veterinary community in the South. There is no need to detail the manifold services rendered by Mr. McIntosh during his life in London since 1908, to the major activities of the profession: in particular to the Council, R.C.V.S., the N.V.M.A.—of which he was President in 1927-28 and Hon. Secretary in 1931-33—and the safeguarding of the interests of the horse and horse-owners in the Metropolis. All will be glad to have the evidence furnished by his acceptance of nomination for re-election to the Council of the Governing Body of the profession that Mr. McIntosh will maintain his active participation in those concerns the interests of which the enthusiastic exercise of his qualities of leadership has done so much to foster.

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Appointment.—It is with pleasure that the University College of North Wales announces the appointment of its Assistant Veterinary Investigation Officer to the staff of the Institute of Animal Pathology, Cambridge, in connection with the Institute's work on sterility.

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Birth.—On February 27th, to Rita (*née* Everest), wife of D. Richardson, M.R.C.V.S., "Pendoggett," Shepherd's Lane, Caversham, Reading, a son.

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Marriage.—Howse—Hartley.—February 21st, at Emmanuel Church, Leeds, by the Rev. H. Norman Hodd, M.A., Arthur Christopher Howse, M.R.C.V.S., eldest son of Mr. and Mrs. L. C. Howse, of Wallasey, to Hilda Hartley, only daughter of the late Mr. and Mrs. H. Hartley, of East Ardsley, Wakefield.

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R.C.V.S. OBITUARY

Butcher, Thomas, Yeldside, Cleobury Mortimer, Salop. Graduated Edinburgh, April 25th, 1884. Died February 25th, 1939; aged 76 years.

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Morris, Ebenezer William, 4, High Street, Uckfield, Sussex. Graduated London, December 18th, 1891. Died February 20th, 1939; aged 68 years.

A VETERINARY PIONEER IN AUSTRALIA

Writing of a Cornishman who became a pioneer veterinarian in Australia, James Barnes, who died recently and who was a regular subscriber to the *Veterinary Record* (as is his son), a writer in *Reynolds News* says: "Sixty-four years ago James Barnes, then a lad of 16, left Newlyn, Cornwall, with his parents, and sailed for Australia in a ship called the Lincolnshire. He was soon apprenticed to a chemist, and sat for the first pharmacy examination ever held in Australia, securing Certificate No. 1. Then he qualified also as a veterinary surgeon; and 50 years ago went up to a small town in the sheep country to carve out a career. He helped to put that bush town of Minyip on the map. He stayed there all his life.

"I met him when touring the bush some years ago, and he became my friend. He has written to me now and then about his agricultural and pastoral work, about the doings of the Progress Association, of which he was chairman for 34 successive years. No American "home-town" gospeller could beat him at enthusiastic local loyalty. He was everybody's friend in Minyip.

"The little four-sheet bush town newspaper which records his death gives him three columns. This *Minyip Guardian and Sheep Hills Advocate* tells me he was 80 years old, that 200 motor cars were needed to convey the mourners from all parts of the State, and an editorial is proudly headed, 'A Great Citizen Passes.' James Barnes is one of the real builders of Australia, and though nobody in the great world may ever have heard of him, his work has been of more worth than that of a dozen Knights of Empire."

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PASTEURISATION, AND THE SAFETY OF MILK SUPPLIES

Evidence to be Collated and Reviewed

Replying to a large and influential deputation from the People's League of Health, received by the Minister of Health, Mr. Elliot, and the Parliamentary Secretary to the Ministry of Agriculture, Lord Feversham, on Friday of last week, the Minister intimated that he had asked one of the more prominent of the younger medical men in this country to undertake the collation and review of the existing evidence on the whole subject of pasteurisation and the safety of milk supplies. When this task had been completed he proposed to publish the result.

Welcoming the deputation, which included Miss Olga Nethersole, the founder of the league, and was introduced by Dr. C. O. Hawthorne, the Minister announced that he had received apologies for unavoidable absence from Lord Dawson of Penn and Lord Horder. Lord Dawson said that he had always supported the principle that all milk intended for human consumption should either be pasteurised or come from certified, tuberculin-tested cattle, and Lord Horder said that his sympathies were entirely with his colleagues of the People's League of Health.

Sir Henry Gauvain said that he considered it incredible that milk, the nation's most precious food, might be supplied without restrictions as to its safety. No other food was thus exempt, and in the interests of both the community and the farmers they should set their house in order and ensure the safety of all who consumed it.

Major Brennan DeVine, President of the National Medical Veterinary Association, said that the percentage of milk samples in large towns showed from 6 to 13 per cent. infected to some degree with tubercle bacilli. The milk which was given by known tuberculous cows was often kept back from general supply and fed to pigs, with the result that pigs got bovine tuberculosis, so that there was likely to be tuberculous pork.

Sir Walter Langdon-Brown said that the economic difficulties in the way of safe milk legislation might be considerable, but they would not be overcome by raising false issues. It was misleading to allege that the medical profession was divided on the subject. Why should the views of an inconspicuous minority against pasteurisation be so frequently quoted against the weight of opinion of the profession as a whole?

Sir John Ledingham said that elaborate investigations had shown that pasteurisation in no way materially affected the nutritional value of milk.

Dr. Veitch Clark, Dr. A. S. M. Macgregor, and Dr. Maule Horne, medical officers of health respectively for Manchester, Glasgow, and Poole, supported the views put forward, and said that their local authorities were prepared to take advantage of permissive powers to control the milk sold in their areas, other than milk coming from tubercle-free herds or milk treated by pasteurisation or other officially recognised heat methods.

The deputation urged the value of milk as a food and the urgent importance of legislation to ensure that consumers might rely on the cleanliness and purity of the milk supply.

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CONGRESS FOR THE STUDY OF ARTIFICIAL INSEMINATION IN ANIMALS

Italian Tribute to Lazarro Spallanzani

We have been asked by Professor Bonadonna to publish the following communication:—

A tribute will be paid to the memory of the well-known Italian biologist—Lazarro Spallanzani—at a meeting to be held in the University of Pavia on April 10th to 12th, 1939. The meeting is being held under the joint auspices of the Sindacato Fascista dei Veterinari and of the Instituto per la Fecondazione Artificiale degli Animali of Milan.

The scientific basis of artificial insemination is largely due to Spallanzani's early work, and it is appropriate that the meeting should pay tribute to him at Pavia, near which town work on artificial insemination is being conducted both experimentally and practically by local and government authority.

At the meeting, leading authorities will discuss the subject under the following l eadings:—

i. Artificial insemination in Italy and the world.

ii. Artificial insemination as a method for combating sterility.

iii. The physiology of semen.

iv. Evolution of semen in relation to fertilisation.

v. Methods of modifying oestrus in relation to ovulation and optimum time for insemination.

vi. Methods of artificial insemination in domesticated animals and birds.

vii. Storage and transport of semen.
viii. Possible influence of artificial insemination on sire, dam and progeny.
ix. Use of artificial insemination in colonial and home territories.
x. Biochemical diagnosis of pregnancy.

On the occasion of the meeting, the Centre for Artificial Insemination at Pavia will be opened. An invitation is extended to all veterinary surgeons interested in, or concerned with, artificial insemination to present a paper or a report of their work to the meeting.

An organising committee has been appointed at the

Instituto per la Fecondazione
Artificiale degli Animali,
Via Monte Ortigara, 35,
Milan.

The Secretary of this committee is Professor Telesfor Bonadonna, to whom all enquiries should be addressed.

The Transactions of the Congress, papers read, etc., will be published, and may be obtained for the sum of 35 lire, post paid, on application to the Secretary prior to the date of the meeting.

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LEGAL NOTES

In-calf Cow by Rail.—On Wednesday, February 22nd, at West Ham Police Court, Mr. Tom Noble, of Crown Farm, St. Ives, Hunts., was fined 40s. for allowing a roan cow to be carried by railway when the calving of the cow during transit was reasonably probable.

Mr. H. E. Bywater, prosecuting on behalf of the County Borough of West Ham, said the proceedings were taken under the Transit of Animals Order of 1927. Four cows were loaded at Kettering Station about noon on December 16th and consigned by Mr. Noble to Mr. Tom Pain, of Brentwood, Essex. A roan in-calf cow was separated from the other three cows in the truck by a partition, presumably because she was heavily in calf. On December 17th the cow was noticed to be in difficulties during transit on the railway and the truck was shunted into the Stratford cattle sidings where the roan cow was delivered of a large, full-time, dead calf. There was no reason to doubt that had the cow been allowed to calve normally the calf would have lived.

Mr. Noble, who did not appear, was represented by Mr. Wilkinson, who said that Noble purchased three cows from Kettering Market and another cow, which was the subject of the proceedings, privately from a farm. He was informed by the vendor that this cow was due to calve on December 20th. His client thought it was reasonably safe to travel the animal as he was told she was not due to calve for four days, but he might have been misinformed on this point. In any case he did not know there was an Order in force prohibiting the carriage of cows near to calving since in country districts very little notice was taken of these Orders. He had a good character and had not been in any trouble previously.

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SHIRE HORSE SOCIETY

Mr. Runciman's Show Success

At the annual meeting of the Shire Horse Society held on February 22nd, reference was made to a suggested scheme for the alteration of stud book registration of Shire mares and fillies. The scheme, which will come before the council in April, will involve the institution of grading-up registers.

Mr. J. Morris Belcher, the retiring President, referred to the excellent standard of the animals at the show just terminating and said that mechanisation would not drive the horse breeders out of existence. They could not do without the horse on the farm.

Mr. W. J. Cumber was welcomed as the new President, and it was announced that Colonel A. Falkner Nicholson had been nominated as President-Elect for 1940.

Sir Walter Gilbey, to whom a tribute was paid for all he had done on behalf of the Society, said in spite of mechanisation he believed that the horse was still wanted, and they could look forward to a successful future.

Bower Winalot's Triumph

In connection with the Society's Diamond Jubilee Show, referred to above, a great impression was made on the opening day by a former champion, Bower Winalot, which won the Society's championship cup outright in 1934 as a five-year-old. Later in the show a large gathering of breeders and exhibitors were delighted to see this stallion, now ten years of age, further justify his proud name by again winning the supreme championship. In the days of his former successes at Islington, Bower Winalot was owned by Mr. G. R. C. Foster. Since then he has returned to his breeder, Mr. J. G. Runciman, M.R.C.V.S., of Cambridge, who received the congratulations of the Society on the excellent appearance of the horse and the fine show standard displayed by the stallion in the ring. His colleagues in the profession also will wish most heartily to congratulate Mr. Runciman on this further triumph of his magnificent horse.

The runner-up was another handsome animal of true Shire type, the three-year-old brown Wootton Mimic, shown by Mr. J. Morris Belcher, President of the show.

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THE IMPERIAL BUREAU OF DAIRY SCIENCE

"In 1936 the British Commonwealth Scientific Conference which met in London to consider the working of the organisations controlled by the Executive Council of the Imperial Agricultural Bureaux, recommended that a new Imperial Bureau of Dairy Science be established. The conference also suggested the National Institute for Research in Dairying as the most suitable place for the Bureau.

"Following agreement by all the authorities concerned, the new Imperial Bureau of Dairy Science has now been established at Shinfield, near Reading. Professor H. D. Kay, director of the National Institute for Research in Dairying, has been appointed director of the Bureau. Mr. W. G. Sutton, from Massey Agricultural College, New Zealand, has been appointed deputy director and has now taken up his duties. The Bureau is financed co-operatively by the Governments of the British Empire in the same way as the other Imperial Agricultural Bureaux.

"The functions of the Bureau are to index research work in dairy science, whether carried out in the Empire or elsewhere; to collect, abstract and collate information bearing on dairy science and to distribute such information both by publication and by private communication to research workers, officials and advisory

officers throughout the Empire. In addition the Bureau is charged with the duty of establishing and maintaining contact between research workers with common interests, promoting conferences of workers and visits to research centres, and in general encouraging the circulation of information, ideas, material and personnel.

"The field of dairy science to be covered by the Bureau was defined by the Conference when recommending its establishment. This field includes the microbiology, chemistry and physics of milk and its products; animal diseases in so far as they affect milk and its products; the technology of processing milk and manufacturing dairy products; the physiology of milk secretion as affecting quality and quantity of milk and dairy products; standards for the composition and quality of milk and its products.

"The routine duties of the Bureau, such as indexing and abstracting, will already be familiar to many dairy workers from the activities of the Bureaux already established in other subjects. An aspect of Bureau work which may not be so well known and understood is the more informal service which can be given to research workers, teachers and field officers. The Bureau will deal directly with the individual workers in dairy science, who are invited to write to the Bureau for information which is not obtainable in their own countries. The Bureau may be able to supply the information itself, or to put the enquirer in touch with someone who can do so more effectively.

"The new Imperial Bureau of Dairy Science has been established in answer to requests for a clearing house for information in dairy science; its value to dairy science, and to the dairy industry generally, will largely depend on the extent to which research workers and others avail themselves of its services."—*Nature*, December 24th, 1938.

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Erratum.—We regret that, owing to a printer's error in the notice on page 53 of the *Veterinary Record* of January 14th, 1939, of the Administration Report of the Army Veterinary Service in India, 1937-38, the establishment of Veterinary Assistant Surgeons was erroneously given as 24 instead of 124.

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CHILLINGHAM WILD CATTLE: PRESERVATION SCHEME

The immediate future of the famous herd of Wild White cattle at Chillingham is again in serious jeopardy, for, owing to the heavy and ever-increasing burden of taxation, their owner, the Earl of Tankerville, is unable to maintain them at his own expense, and there is a possibility of their having to be destroyed.

When the present Earl of Tankerville succeeded to the title in 1931 a similar situation arose, but, fortunately, under the trusteeship of the late Viscount Grey of Fallodon and others, it was then possible to come to an arrangement whereby the Zoological Society of London took a seven years lease of the Wild Cattle Park at Chillingham and maintained the herd for that time. The arrangement came to an end with the close of 1938.

The Wild cattle have been at Chillingham for over 700 years. The herd is completely pure, and is the last of this type in England—and remaining, moreover, in their natural surroundings. It is therefore felt by those who know of this unique herd, and who care for the preservation of what little remains of the wild life of ancient England, that the extinction of the Chillingham Wild cattle would be a calamity; for, once destroyed, they can never be replaced.

A temporary committee has been formed with a view to putting into operation a scheme for maintaining and preserving the Chillingham Wild cattle at Chillingham. If sufficient public support is shown to be forthcoming, an association will be formed, probably to be called the "Chillingham Wild Cattle Association."

The Chillingham Wild Cattle Association will have a limited membership, which will be open to those, whether Northumbrian or not, who desire to assist in saving the herd from extinction.

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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THE VALUE OF THE INTRADERMAL TUBERCULIN TEST

To the Editor of the Veterinary Record

Sir,—One would readily agree with Mr. S. J. Edwards (*Veterinary Record*. **51**. 7. 227) that it is incumbent on us all to publish any records we possess of the *post-mortem* examination of cattle which have been submitted to the double intradermal test. Unfortunately, the records of such work in which synthetic medium tuberculin has been used are few. However, one must appreciate that the circumstances under which detailed *post-mortem* examination is possible are often denied the field worker. It is generally accepted that the proper *post-mortem* examination for tuberculosis of the animal not obviously affected is a tedious job—possible only under conditions approaching those of the laboratory *post-mortem* room. Since Mr. Edwards worked under these conditions his record is particularly valuable. He has shown that his tuberculin tests applied to calves approximately twelve weeks old, half of which were exposed to natural infection by the ingestion of infected milk, gave results which have an accuracy of the order of 97 per cent.

Some might have expressed surprise had the finding been otherwise, for it is generally accepted that the differentiation between infected and non-infected by means of the tuberculin test is particularly clean cut when the subjects are calves. The infected calf is usually so sensitive to tuberculin that it reacts in such a typical manner that reinjection is unnecessary. On the other hand, non-infected calves give as typical negative swellings as one could wish. The reaction of the tuberculous calf is, with such striking regularity, so clear cut that, apart from the possible difficulty of regularly finding naked eye lesions in these recently infected animals, one would expect a close correlation between the results of the testing of calves with any tuberculin and the findings on *post-mortem* examination.

This seems so generally acceptable that one

must admit that it was the final paragraph of Mr. Edwards' letter which tempted us into writing on this subject. It certainly bears quotation:—

> "I do not think it necessary to make further comment on these results because it would appear to me that they bear sufficient testimony to the *specificity* of the tuberculin used, a criterion which is of more importance than the potency which would appear to imply the ability to produce skin reactions."

Mr. Edwards very wisely chose to put the word specificity in italics, and we would hope that, through the columns of the *Record*, we may see a very useful and enlightening correspondence on this topic. We would gladly add our quota to it, but it seems necessary in the first place to get some accepted definition of what one means by "specificity." Some have suggested that a veterinary tuberculin of high specificity is one which: (*a*) regularly produces positive swellings in tuberculous cattle, even those of low sensitivity; (*b*) shows little tendency to cause swellings which are not typically negative in non-tuberculous cattle even if sensitive to protein allied to that of the mammalian tubercle bacillus, through contact or infection with an allied organism or otherwise.

Mr. Edwards based an opinion regarding the specificity of the tuberculin he used on results obtained in testing and examining *post-mortem* two groups of calves. Since infected calves are regularly highly sensitive and readily react to tuberculin, and since non-infected calves—possibly through their having had little contact with organisms or substances related to the tubercle bacillus or its protein—regularly show very typical negative swellings, one would not, under the above definition, have used these subjects for any determination of the specificity of tuberculin. It would, therefore, seem probable that Mr. Edwards has some different definition of specificity, and until one knows what the technical term conveys to other parties it might well be unfortunate to open a discussion.

Yours faithfully,
R. F. Montgomerie.

February 27th, 1939.

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THE R.C.V.S. COUNCIL ELECTION

To the Editor of the Veterinary Record

Sir,—After reading the editorial on what may be regarded as a letter of advice to the electors, I must confess that I am little wiser than when I started, and I do not consider that the advice if followed out would result in any improvement in the present constitution.

The concluding paragraph that any man elected may in due time be selected to act as President, is nothing to go by. In view of the period that elapses before he reaches this final stage of evolution, his mental outlook may have improved or deteriorated. Further, the good sense of other members of the Council can be trusted to select the best President.

The only real guide, is to ask candidates to state in these columns their views on current matters of importance to our profession in *all* its branches, and moreover to assure the electors that if returned they will adhere to them. A questionnaire should not be difficult, judging by the strafing we present members are getting from time to time!

Yours faithfully,
J. F. D. Tutt.

"Rothiemurchus,"
St. Cross,
Winchester.

DISEASES OF ANIMALS ACTS, 1894 to 1937, and AGRICULTURE ACT of 1937 (PART IV)

SUMMARY OF RETURNS

Period.	Anthrax.		Foot-and-Mouth Disease.		Parasitic§ Mange.		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks reported by the Local Authorities.	Animals attacked.	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Period 1st to 15th Feb., 1939	47	48	3	477	3	8	24	53	27
Corresponding period in									
1938	50	53	17	1,711	6	9	9	18	3
1937	36	41	1	84	13	27	24	62	39
1936	25	26	—	—	9	49	25	88	72
Total 1st January to 15th Feb., 1939	139	145	25	3,921	11	21	107	159	93
Corresponding period in									
1938	139	144	92	11,692	22	29	61	56	26
1937	94	106	3	262	35	59	74	165	102
1936	71	93	4	379	26	77	87	303	180

Note.—The figures for the current year are approximate only.

§ Excluding outbreaks in Army Horses.